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T. THORELL.

REMARKS ON SYNONYMS

OF EUROPEAN SPIDERS.

REMARKS

ON 21 JULY

1870

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REMARKS
ON SYNONYMS
OF EUROPEAN
SPIDERS,

BY

T. THORELL,

PH. D., JUNIOR PROFESSOR OF ZOOLOGY
IN THE UNIVERSITY OF UPSALA.

'Sum cuique'.



UPSALA,

C. J. LUNDSTRÖM,

Bookseller to the University.

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DEDICATED

TO

OLOF WIJK ESQ.,

KNIGHT OF THE ORDER OF THE POLAR STAR,
MEMBER OF THE SECOND CHAMBER OF THE SWEDISH RIKSDAG,

AS A MARK OF RESPECT AND GRATITUDE,

BY

THE AUTHOR.



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Thorell
June 8, 1904.

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REMARKS
ON SYNONYMS
OF EUROPEAN
SPIDERS,

BY

T. THORELL.

No 1.

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In the treatise now laid before the public, the author has endeavoured to give some account of the synonymous denominations of those species of spiders, which are described in N. WESTRING's well known work: *Araneæ Suecicæ* (Gothoburgi 1861), as also of some other European species, partly described in J. BLACKWALL's *History of the Spiders of Great Britain and Ireland* (London 1861, 1864), partly registered in the *Catalogue synonymique des Aranéides d'Europe* given by E. SIMON in his *Histoire Naturelle des Araignées* (*Aranéides*), Paris 1864. — Similar remarks on the European genera of spiders I have had the opportunity of communicating in a work lately published: *On European Spiders*¹⁾; in that work, which may be considered as an introduction to the present investigation, I have also laid down the rules for nomenclature etc., which I have here applied, and I have expounded my views on the classification of spiders, indicating the characteristics, by which the European families and genera of this group of animals seem to me most readily and surely distinguished. A catalogue of the works of systematic and descriptive character treating of the European Spider-Fauna, as also of some other arachnological treatises, has also been appended to that work, and with respect to the works cited in the following pages, I beg leave to refer the reader to that catalogue, where their titles are given in full.

As the object of this treatise is to endeavour to fix the nomenclature of the species here treated of, not to provide references to all the places, where they may have been mentioned, such citations only have been admitted into the lists of synonyms, as were necessary to

1) T. THORELL, On European Spiders. Part I: Review of the European Genera of Spiders, preceded by some Observations on Zoological Nomenclature. (Nova Acta Regiæ Societatis Scientiarum Upsaliensis, Ser. III, Vol. VII, Fasc. I et II. 1869—70). Also separate: Upsaliæ 1869—70.

show the different denominations under which each species had been described, together with their origin and date; I have however always cited the above-mentioned works of WESTRING and BLACKWALL, occasionally also some other book in which the species under notice had been particularly well figured or described, or which for some other reason appeared to me to deserve especial reference. Names taken from *mere catalogues of species* I have admitted only in the few cases, in which I could with certainty identify the species intended.

In the case of every species I have, immediately after its name in the author under review, placed within brackets [] the name which I look upon as the proper name of the species, together with the date of the year, to which the *specific* name belongs. Also after every *generic* name I have placed within brackets the corresponding name acknowledged by me, and I have indicated the year from which it dates. The name of the "authority" or writer, who first imposed the specific name, stands in parentheses, when in his works the species bears *another generic* name: in other cases it is without parentheses; in the cases of *generic* names, parentheses enclosing the authority indicate, that in the (latest) work of the author cited the *compass of the genus is different* from that here received. A † before a synonym indicates that the specific name, as having been previously used within the genus, or rendered inappropriate for some other reason, is to be changed for another, more recent denomination. — For everything else regarding the plan and arrangement of the present treatise, I beg leave to refer to my former work: On European spiders, p. 1—38.

Of the greatest part of the species described by WESTRING, I have had the opportunity of examining specimens determined by himself: the few that I have not myself seen, are marked with a *, as is also the case with all other species here treated of, that are known to me by figures or descriptions only. Many interesting Swedish spiders have been communicated to me by Prof. C. STÅL, Dr. C. J. E. HAGLUND and other friends, as will be found stated in various places in the following pages. Of the spiders described by BLACKWALL, the Rev. O. P. CAMBRIDGE, of Bloxworth, Dorsetshire, has kindly sent me numerous species, all with certainty identified.

Not only are my especial thanks in the first place due to Mr. WESTRING and the Rev. Mr. CAMBRIDGE for the assistance they have thus kindly given me, but I have the pleasure to acknowledge many and valuable communications from Prof. ALEX. V. NORDMANN of Hel-singfors, Dr. L. KOCH of Nürnberg, Prof. A. MENGE of Danzig, Prof.

E. OHLERT of Königsberg, Mr. E. SIMON of Paris, Count E. KEYSERLING of Obergebirgsdorf in Upper Lusatia, Dr. L. REDTENBACHER of Vienna, Prof. A. E. GRUBE of Breslau, Prof. GIOV. CANESTRINI of Padova, and Prof. J. C. SCHIÖDTE of Copenhagen, and I perform a truly pleasant duty in openly acknowledging my obligations to these gentlemen.

I.

SYNONYMICAL REMARKS
ON THE SPIDERS DESCRIBED IN WESTRING'S
ARANEÆ SUECICÆ.

Being best acquainted with the spiders described by WESTRING, I begin by going through the species in his *Araneæ Suecicæ*; I shall afterwards, when, in considering the other two works before us, I come to species described by WESTRING, only have to refer to what is said here.

(Pag, 20.) FAM. I. EPEIRIDÆ [= *Orbitelariæ* NOB.].

(Pag. 20.) I. EPEIRA [= *Epeira* (WALCK.) 1805 + *Cyrtophora* (SIM.) 1864].

On these genera vid. THOR., On Eur. Spid., p. 53 and 57.

(Pag. 23.) 1. *E. angulata* [= *Epeira angulata* (CLERCK) 1757 + *Epeira Nordmanni* N.].

"Var. a" et "Var. b" [*Epeira angulata* (CLERCK)]:

Syn.: 1757. ARANEUS ANGULATUS CLERCK, Svenska Spindlar (*Aranei Suecici*), p. 22,
Pl. 1, tab. 1, figg. 1—3.

1757. ., VIRGATUS ID., *ibid.*, p. 41, Pl. 2, tab. 2.

1758. ARANEA ANGULATA LINN., *Syst. Nat.*, Ed. 10, I, p. 620.

?1805. EPEIRA ANGULATA WALCK., *Tabl. d. Aran.*, p. 57 (*ad partem*).

1833. ., ., SUND., Svenska Spindlarnes Beskrifning, in Vetenskaps-Akademiens Handlingar f. 1832, p. 234 (*excl. "pullulis"*).

1835. ., EREMITA C. KOCH, in HERR.-SCHÆFF., *Deutschl. Ins.*, 131, 23, 24.

1837. ., QUERCETORUM ID., *Uebers. d. Arachn.-Syst.*, 1, p. 2.

?1837. ., PINETORUM ID., *ibid.*, p. 3.

1845. EPEIRA ANGULATA C. KOCH, Die Arachn., XI, p. 77, (*ad partem*:) Taf. CCCLXXIX, figg. 892, 893.
 1856. „ „ THOR., Rec. crit. Aran., p. 9 (*excl.* "Var. γ ").
 ?1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 360, Pl. XXVII, fig. 259.
 1866. „ „ MENGE, Preuss. Spinn., p. 47, Pl. 2, tab. 2.

"Var. c" [*Epeira Nordmanni* N.]:

1845. EPEIRA ANGULATA C. KOCH, Die Arachn., XI, Tab. CCCLXXIX, figg. 894, 895.
 1856. „ „ Var. γ THOR., Rec. crit. Aran., p. 9.

The above synonyms, with the exception of the last two, apply only to the varieties of WESTRING'S *E. angulata*, which he (p. 24) marks as "Var. a" and "Var. b": his "Var. c" (= *E. angulata* Var. γ THOR., loc. cit.) is a separate species, which I call *E. Nordmanni*, in memory of the highly deserving zoologist AL. v. NORDMANN, to whom we are indebted for the first knowledge we possess of Finnlands Spider-Fauna. The female of this species differs from the genuine *E. angulata* (CLERCK) in its smaller size — I have a full-grown specimen, of which the cephalothorax is only 4^{mm}. long, the 1st pair of legs however 17^{mm}. —, by the different colour of the abdomen (conf. our descr., loc. cit.), and especially by the form of the "corpus" of the vulva¹⁾, which is very short, when seen from before or from below scarcely perceptible; on its posterior (upper) side it exhibits *one* longitudinal central furrow, bordered by two dark, parallel, somewhat \sim -formed ribs. The belly is *without tubercles* behind the vulva. The pars cephalica is a little narrower in front, and of a yellowish brown colour, darker at the sides; the sternum is dark brown, *without a longitudinal yellow central mark*. To this species, *E. Nordmanni*, the varieties of C. KOCH'S *E. angulata*, which he has figured loc. cit. fig. 894 and 895, undoubtedly belong. — I have myself taken *E. Nordmanni* in Upland, and have also received specimens from Finland, from AL. v. NORDMANN.

1) Conf. Rec. crit. Aran., p. 11. — Under the term *vulva* I comprehend the external sexual organs of the female, or what is commonly called *epigyne*, an ill-formed word, by which originally (in SAVIGNY and AUDOUIN) was meant the "scapus" ("clavus" MENGE) in which in certain spiders, as e. g. *Epeira angulata*, the vulva is drawn out. MENGE calls the vulva *sarum*, which word he derives from "σάρων, pudendum muliebre, HESYCH." It is not however σάρων, but σάρον, which according to HESYCHIUS has that signification, and if a Latin word is to be formed from it, that word must be *saro*, not *sarum*. — Σάρον signifies a broom.

BLACKWALL complains with reason of the scanty and insufficient character of most existing descriptions of *E. angulata*, "which render any attempt to reconcile the perplexed synonyma of this species almost hopeless." In my Rec. crit. Aran.¹⁾ he might however have found a circumstantial description of the *E. angulata* of the Swedish Arachnologists, and, for the sake of comparison, also of two closely allied South-European species, *E. Schreibersii* HAHN (unquestionably identical with *E. cornuta* WALCK., which C. KOCH and BLACKWALL erroneously refer to *E. angulata*) and *E. regia* C. KOCH, THOR. — Among older authors at least LINNÉ, DE GEER and FABRICIUS have by their *Ar. angulata* meant the right *E. angulata* (CLERCK); ROSSI'S *A. angulata* is perhaps a collective name for *E. Schreibersii* and *E. regia*. *Ar. angulata* SULZER is according to C. KOCH = *E. patagiata* (CLERCK); *Ar. angulata* SCHRANK (Enum. Ins. Austr., p. 527), which "habitat in urtica dioica et urente," is at any rate not = *E. angulata* (CLERCK), and perhaps = *Meta segmentata* (CLERCK).

WALCKENAER'S *E. angulata* appears to include not only *E. regia*, but also the true *E. angulata*. The above cited synonyms derived from SUNDEVALL and MENGE are perfectly certain; HAHN'S *E. angulata* (Die Arachn., II, p. 16, fig. 108) belongs decidedly to the same species, as do also C. KOCH'S synonyms adduced above, probably even his *E. pinetorum*, of the male of which KOCH says that it has the tibiae of the 2nd pair strongly incrassated, *clublike*²⁾. OHLERT'S *E. angulata* (Aran. d. Provinz Preussen, p. 32) is moreover a certain synonym for *E. angulata* (CLERCK). The species described under this name by BLACKWALL is *probably* the same, but if so, the female seen by him, and the vulva from which he has figured fig. 259, *e*, must have been an *imperfectly developed* specimen; for in the full-grown female the vulva displays a long, almost ∞ -formed "scapus," similar to that of *E. Nordmanni*, *E. diademata* and some others.

In *E. angulata* and *E. regia* C. KOCH, THOR., the *corpus*, from which that long *scapus* proceeds, exhibits on the posterior or upper side (i. e. that turned towards the belly) *two* longitudinal furrows uniting at the base, by which the corpus is divided into *three* portions, of which the two outer include the central one in an almost horse-shoe-formed enclosure; in *E. Schreibersii* the corpus vulvæ has on that side only *one* longitudinal central furrow, while in *E. grossa* it

1) Recensio critica araneorum suecicarum, quas descripserunt Clerckius, Linnæus, De Geerus. (Nova Acta Reg. Soc. Scient. Upsal., Ser. III, Vol. II, Pars Prior). — Also separate: Upsaliæ 1856.

2) Die Arachn., XI, p. 97.

is on the same side deeply and broadly *excavated*; in the first-named two species the belly exhibits *two small tubercles* immediately behind the vulva, which are absent in *E. Schreibersii* and *E. grössa*. In *E. angulata* the sides of the pars cephalica of the cephalothorax are perfectly *parallel*, in the other just mentioned species the pars cephalica is gradually *a little narrowed* in front. — The female of *E. Nordmanni* we have already (pag. 4) discussed.

The male of *E. angulata* has a *shorter*, obtuse, somewhat curved tooth on the underside of the coxa of the 1st pair of legs, near its extremity, outwards, and a *stronger*, conical, pointed thorn towards the base, behind, of the coxæ of the 2nd pair (not, as MENGE loc. cit., p. 49, says, *two* thorns at the base of the coxæ of the second pair). *E. Nordmanni* ♂ has also an obtuse, somewhat crooked tooth on the underside of the coxa of the *first* pair, towards its extremity, and a *very small*, scarcely perceptible tooth under the coxa of the *second* pair; the incrassated tibiæ of 2nd pair of legs are in this species *thicker in the middle*, whereas they in *E. angulata* are of the *same thickness from the middle to the extremity*. — The males of *E. regia* and *E. Schreibersii* are unknown to me. The male of *E. grössa* has *no* tooth under the coxæ of the *first* pair, but a *very strong*, *straight* thorn under the base of the coxæ of the *second* pair, and also a crooked thorn at the extremity, inwards, of the tibiæ of the 2nd pair, which are thickened and *of uniform substance from the middle to the extremity*. Specimens (♂ and ♀) of this latter species from Hungary (Mehadia) and Syrmia, I have received through the kindness of Dr. REDTENBACHER of Vienna, who has also given me two specimens of *E. regia* (from Mehadia), which perfectly agree with those described by me, and which I captured in Italy, together with *E. Schreibersii* (vid. Rec. crit., p. 17).

Epeira affinis DOLESCH. (Syst. Verz., p. 29 ¹) — or *E. austriaca*, as I propose to call it, the name *affinis* having been already appropriated by NICOLET to another species of Epeira, from Chili ²) — is extremely like *E. Schreibersii*, and is perhaps only a Cisalpine variety of that species. Yet the *humeral processes* on its abdomen are *considerably smaller* than those of *E. Schreibersii*: in the vulva I see no

1) Systematische Verzeichniss der im Kaiserthum (Esterreich) vorkommenden Spinnen (Sitzungsberichte d. Mathem.-Naturwissenschaftl. Classe d. Kais. Akad. d. Wissensch. zu Wien, Bd IX).

2) Vid. GAY, Historia politica e fisica de Chile, Zool., III, p. 490. — Yet another species with the same name is *E. affinis*-BLACKW. (Notice of Spid. captured by POTTER in Canada, in Ann. and Mag. of Nat. Hist., XVIII, p. 77).

other difference than that, whereas the corpus vulvæ in this last species, seen from the side, is *curved backwards* at the apex, it is in *E. affinis* or *austriaca* almost straight. Dr REDTENBACHER has given me a specimen of this latter species from the Austrian "Vor-Alpen." DOLESCHALL thinks it may possibly be a variety of *E. pulchra* C. KOCH or *E. cornuta* DOLESCH., with which I am unacquainted; but this seems to me but little probable.

Not only has DOLESCHALL (Syst. Verzeichn., p. 15), but also BÖCKH (Spinn. d. Umgeb. Presburgs, in Verhandl. d. Vereins f. Naturkunde z. Presburg, II (1857), 2, p. 82) registered *E. cornuta* WALCK. as synonymous with *E. pulchra* C. KOCH (Die Arachn., XI, p. 100, f. 908), an opinion in which I cannot by any means participate.

SIMON (Hist. Nat. d. Araignées, p. 494), as well as C. KOCH and BLACKWALL, considers the South-European *E. cornuta* WALCK. as identical with CLERCK's, LINNÉ's and DE GEER's northern *Ar. angulata*. WALCKENAE's *E. angulata* he unites with C. KOCH's *E. regia*, in which he seems to be at least partially right, but instead of calling the species *E. regia*, he gives it the name of "*E. cornuta* E. SIM.," thereby still farther increasing the synonymistic confusion that prevails among these species. The specific name *cornuta* belongs of course to that species of the genus *Epeira*, which was first described by that name, viz. *E. cornuta* (CLERCK).

Concerning *E. Schreibersii* HAHN (= *E. cornuta* WALCK., *E. peccoralis* C. KOCH, *E. spinivulva* DUFOUR) see also THOR., Rec. crit., p. 14; with regard to *E. regia* C. KOCH (probably = *E. Gistlii* ID.), see *ibid.*, p. 17.

As to *A. virgatus* CLERCK, *vid.* Rec. crit., p. 21. MENGE (Preussische Spinnen, p. 48) doubts whether *A. virgatus* ought to be considered as synonymous with *E. angulata*, and thinks it more probably the same as *E. sollers* WALCK., because CLERCK mentions *black transversal lines* on the abdomen, which MENGE looks upon as a distinguishing mark of *E. sollers*. But in the first place it is distinctly stated of *A. virgatus*, that its abdomen has "*duo anguli conspicui*" (Swedish: "tvänne starka hörn," *two strong angular protuberances*) which cannot possibly be said of *E. sollers*; and as for the black transversal lines, they are certainly to be found in several varieties of *E. angulata*, as also of *E. diademata* and others. We would also call attention to the following expressions in the more detailed description of the abdomen's colour in *A. virgatus*: "*Angulos interlabitur crassior nigriorque linea, albo punctulo in medio notata.*" Just such a variety (a ♂ jun.) of *E. angulata* I have described in Rec. crit., p. 13.

That specimen has also on the sides of the abdomen, on both sides of the central field, several very distinct, oblique, parallel, black lines, and seems to me fully to agree with the description of *Ar. virgatus* (CLERCK). — *E. sollers* has not hitherto been met with in Upland, where CLERCK collected all the species he has described.

(Pag. 26.) 2. *E. diademata* [= *Epeira diademata* (CLERCK) 1757.]

- Syn.*: 1757. ARANEUS DIADEMATUS CLERCK, Sv. Spindl., p. 25, Pl. 1, tab. 4.
 1757. „ PELEG ID., ibid., p. 27, Pl. 1, tab. 5.
 1758. ARANEA DIADEMA LINN., Syst. Nat., Ed. 10, I, p. 619.
 1763. „ LINNÆI SCOP., Ent. Carn., p. 392.
 1778. „ CRUCIGER DE GEER, Mém., VII, p. 218, Pl. 11, fig. 3—8.
 1802. „ MYAGRIA WALCK., Faune Par., II, p. 192.
 1805. EPEIRA DIADEMA ID., Tabl. d. Aran., p. 58.
 1805. „ MYAGRIA ID., ibid., p. 59.
 1836. „ STELLATA C. KOCH, in HERR-SCHIEFF., Deutschl. Ins., 134, 7.
 1856. „ DIADEMATA THOR., Rec. crit. Aran., p. 18.
 1864. „ DIADEMA BLACKW., Spid. of Gr. Brit., II, p. 358, Pl. XXVI, fig. 258.
 1866. „ DIADEMATA MENGE, Preuss. Spinn., p. 42, Pl. 1, tab. 1.

The oldest specific name of this spider, *diademata*, I have in my Rec. crit. restored. *E. stellata* C. KOCH most assuredly belongs to the same species. I captured a specimen agreeing in size and form with *E. stellata*, but in no wise specifically differing from *E. diademata*, at St Moritz in Ober Engaddin in Switzerland, about 6200 feet above the level of the sea. — Prof. TH. FRIES has brought home a specimen of *E. diademata* from Mageröe (in the Norwegian Finnmark), which he kindly gave me; so that the species is distributed over the whole of Europe, from the south of Italy¹⁾ to North-Cape. It is also met with in Iceland²⁾. According to GAY³⁾ it is even found in Chili.

To this species must be aggregated the spider called by WATT⁴⁾ *Ar. obtextrix*, "the gossamer spider," it being according to him the young of "*A. geometrica*" or "*horticla*," by which he doubtless means

1) CANESTRINI and PAVESI, Araneidi Italiani (Atti della Società Italiana di Scienze Naturali, XI, Fasc. III, p. 56).

2) See OLAFSEN, Reise igiennem Island, p. 608.

3) Hist. fis. e pol. de Chile, Zool., III, p. 489.

4) Obs. on the *Ar. geometrica* etc., (Memoirs of the Werner. Nat. Hist. Society, Vol. VI, p. 365—376). — The genus *Epeira* does not however seem to be among those, the species of which contribute much to the formation of "the gossamer."

Ep. diademata. Other writers have by the name *Ar. obtectrix* or *obtectrix* meant other, or have confounded several, species: *Ar. obtectrix* STRACK¹⁾ for example is the same as *Pachygnatha DeGeeri* SUND. (Vid. inf.: *Pach. DeGeeri* WESTR.). The first who speaks of an "*Ar. obtectrix*" appears to have been BECHSTEIN²⁾, who has under that name described certain small spiders, which he (erroneously) considered to be the sole causers of the phenomenon so well known under the name of "gossamer," "fils de la Vierge," "fliegender Sommer." This *Ar. obtectrix* BECHST. probably includes divers species of the genera *Walckenaera* (*Micryphantes*) and *Erigone*.

E. lutea C. KOCH, adduced by WALCKENAER as synonymous with *E. diademata*, is quite a different species (Vid inf., p. 17).

(Pag. 28.) 3. ***E. pyramidata*** [= *E. marmorea* (CLERCK) 1757, *Var. γ* THOR.].

See next species, *E. marmorea*.

(Pag. 29.) 4. ***E. marmorea*** [= *Epeira marmorea* (CLERCK) 1757].
Var. α (forma principalis)³⁾:

- Syn.*: 1757. ARANEUS MARMOREUS CLERCK, Sv. Spindl., p. 29, Pl. 1, tab. 3.
1757. " BABEL ID., ibid., p. 30, Pl. 1, tab. 6.
?1763. ARANEA RAJI SCOP., Ent. Carn., p. 394.
1775. " MARMOREA FABR., Syst. Ent., p. 434.
1778. " AURANTIO-MACULATA DEGEER, Mém., VII, p. 222, Pl. 12, fig. 16, 17.
?1789. " AURANTIA OLIV., Encycl. Méthod., IV, p. 200.
1797. " REGALIS PANZ., Faun. Ins. Germ., 40, 21.
1802. " MELITTAGRIA WALCK., Faune Par., II, p. 191.
1805. EPEIRA " ID., Tabl. d. Aran., p. 59.
1805. " MARMOREA ID., ibid., p. 60.
?1857. " INSULARIS HENTZ, Araneides of the United States, in Boston Journ. of Nat. Hist., V, p. 470, Pl. XXX, fig. 3.

1) Beobacht. üb. d. Sommerflug u. d. Spinne die ihn hervorbringt (Neue Schriften d. Naturforsch. Gesellsch. zu Halle, Heft 5, p. 50).

2) Ueb. d. wahr. Ursprung des flieg. Sommers, in LICHTENBERG and VOGT, Magaz. f. d. Neueste aus d. Physik u. Naturgesch., Bd VI (1789). — Conf. BULLMANN, Ueb. d. Natur u. Entstehung d. fliegenden Sommers, in Neue Schrift. d. Naturforsch. Gesellsch. zu Halle, Hft 5, p. 22.

3) "Pictura abdominis distincta; area dorsualis postica non vel parum obscurior quam media."

1858. *EPEIRA MARMOREA* Var. α THOR., Om Ep. marm. o. pyram., p. 246.
 1866. „ „ MENGE, Preuss. Spinn., p. 50, Pl. 4, tab. 4.

*Var. β , intermedia*¹⁾:

1858. *EPEIRA MARMOREA* Var. β THOR., loc. cit.

*Var. γ , pyramidata*²⁾:

1757. *ARANEUS PYRAMIDATUS* CLERCK, Sv. Spindl., p. 34, Pl. 1, tab. 8.
 1776. *ARANEA BETULÆ* SULZER, Abgek. Gesch. Schweiz. etc. Ins., p. 254,
 Tab. 29, fig. 14³⁾
 1789. „ *RETICULATA* RÖMER, Gen. Ins., p. 33, Tab. XXIX, fig. 14.
 1793. „ *SCALARIS* PANZER, Faun. Ins. Germ., 4, 24.
 1805. *EPEIRA* „ WALCK., Tabl. d. Aran., p. 60.
 ? 1826. *DYSDERA LUTEA* RISSO, H. N. d. princ. prod. de l'Eur. mér., V, p. 162.
 1833. *EPEIRA PYRAMIDATA* SUND., Sv. Spindl. Beskr., in Vetenskaps-Aka-
 demiens Handlingar f. 1832, p. 242.
 1858. „ *MARMOREA* Var. γ THOR., loc. cit.
 1864. „ *SCALARIS* BLACKW., Spid. of Gr. Brit., II, p. 331, Pl. XXIV,
 fig. 240.
 1866. „ *PYRAMIDATA* MENGE, Preuss. Spinn., p. 51, Pl. 3, tab. 3.

In a former paper⁴⁾ I endeavoured to show that *E. pyramidata* is only a variety in colour of *E. marmorea*. I was led to this conclusion by finding one summer at Upsala two ♀ specimens, which, as regards the colour of the abdomen, stood midway between *E. marmorea* and *E. pyramidata*. This naturally led me to consider whether there were any other characteristics in the form of the body or in the colour, that might serve to distinguish these two so-called species; but as the result was entirely negative, and I saw that *E. pyramidata* differed from *E. marmorea* only in the different marking of the abdomen, and I was now in possession of a series of specimens, which clearly showed how the one form went over into the other, I could not otherwise than decide that they belonged to one and the same species.

But the male of *E. pyramidata* was then unknown to me, and I could not therefore be considered as having fully proved the iden-

1) "Pictura abdominis aut tota, aut antice tantum distincta; abdomen supra ad maximam partem flavescens, area dorsuali postica fusca."

2) "Pictura abdominis cum pictura flamenti dorsi confusa, area dorsuali postica fusca vel nigra." THOR., loc. cit.

3) Conf. GÖZE and MARTINI, LISTER'S Naturgesch. d. Spinnen, p. 261.

4) Om *Epeira marmorea* och *pyramidata*, in Öfversigt af K. Vetenskaps-Akademiens Förhandlingar, XV (1858), p. 237 et seq.

tity of *E. pyramidata* and *E. marmorea*. WESTRING, who had a ♂ specimen of *E. pyramidata* at his disposal, and subjected it to an accurate comparison with ♂ of *E. marmorea*, considers himself to have found in the colour and form of certain portions of the male's *bulbus genitalis* differences, that he looks upon as specific and constant, and he therefore preserves *E. pyramidata* as a separate species.

I have however myself subsequently obtained two male specimens of *E. pyramidata* (from Germany) preserved in spirits, and have now endeavoured to test as strictly as possible the tenableness of WESTRING's alleged characteristics. In *neither of these specimens* have I been able to recognize any of the peculiarities, which WESTRING observed in his example of *E. pyramidata* ♂, but they agree exactly in the points adduced by him, as well as in every thing else, the colour of the abdomen alone excepted, with the accurate description he has given of *E. marmorea* ♂. I can explain this only by supposing, that WESTRING's specimen, which had first been preserved in spirits and afterwards mounted on a pin, had in these processes been somewhat changed in form and colour. Moreover the differences, which WESTRING says he has observed, are very trifling, and he himself seems to suspect, that they might perhaps not be found in fresh and uninjured specimens of the animal. Even the "tooth" on a "gibbus", which WESTRING last of all mentions as found in *E. marmorea*, but not in *E. pyramidata*, is in my specimens as distinct in the latter as in the former.

MENGE, like WESTRING, makes *E. marmorea* and *E. pyramidata* separate species, and does not even mention that their difference has ever been questioned. I have endeavoured conscientiously to test the tenability of the differences alleged by him as existing between them, and have found, that these differences, as far as I have been able to verify them at all, *are not constant*. I have not been able to find any constant difference in the colour either of the *cephalothorax* or *legs*, neither can I see that the cephalothorax in *E. pyramidata* is *broad*er in front than in *E. marmorea*. That I can discover no difference in the *organs of copulation*, has been already stated; and when we carefully compare MENGE's descriptions of these organs and the figures he has given of them, letting figures and descriptions mutually complete each other, it appears still impossible to discover wherein the difference lies. The dissimilitude displayed in the *claws* of the legs and palpi, according to MENGE, are greater; but with them the case stands thus. The *palpal claw* of

E. pyramidata ♀ has, says MENGE, seven, that of *E. marmorea* six teeth. I have now examined 6 specimens, three of each form; on one only, and that an *E. marmorea*, have I found seven teeth; in the other 5 there were eight teeth, and in some instance distinct rudiments of a ninth ¹⁾. As regards the tarsal claws, the inferior claw of *E. pyramidata* has, according to MENGE, one tooth, while that of *E. marmorea* has none; but in all the specimens of both species that I have examined, that claw had two teeth (like every other species, that I know of, of the genus *Epeira*). In *E. pyramidata*, according to MENGE, there are in front of that claw two accessory claws ("serrated bristles": MENGE), in *E. marmorea* only one. I have on the contrary always found the accessory claws in pairs, and accordingly at least two in number in all the species of the genus *Epeira* that I have examined. The teeth of the superior tarsal claws are, according to MENGE, in both forms six in number. In *E. pyramidata* I have usually found the number to be eight, in *E. marmorea* generally six, but sometimes more, in one case ten on the inner and eight on the outer claw — all on the 1st pair (in ♀). On the succeeding pairs the number of teeth is usually somewhat less than on the first. All this proves, that the numbers given by MENGE, in the cases where they have been rightly observed, cannot be considered as absolute, but are in reality variable within pretty considerable limits. The same is most probably the case with regard to the difference in the number and arrangement of the spinning-tubes on the spinners of *E. pyramidata* and *E. marmorea*. I have at least not been able to convince myself that any such difference really exists; for I have e. g. in an *E. pyramidata*, which, according to MENGE, should have about 60 spinning-tubes on the anterior spinners, reckoned many more, near 100, which number, according to MENGE, belongs to *E. marmorea*. I must however acknowledge that I have not been able to determine with certainty the number of spinning-tubes on the different spinners; they are in all, according to MENGE, "about 874" in *E. pyramidata*, and "about 816" in *E. marmorea*: but numbers so great as these appear to me to be in themselves evidence that the number of these tubes is not

1) In a previous examination I had found the number of teeth on the palpal claw of both forms to vary between eight and ten, that of the superior tarsal claws between seven and nine, the latter number generally on the 1st pair, the former on the succeeding pairs. (THOR., Om Ep. marm. o. pyr., p. 244).

constant, but variable within pretty wide limits in different individuals of the same species ¹).

I accordingly still continue in the belief, that *E. pyramidata* is only a *variety* (*Var. γ* NOB.) of *E. marmorea*. The intermediate form, our *Var. β*, is comparatively very rare. According to DARWIN's theory one might explain this by supposing that the species is on the point of dividing itself into two species (*Var. α* and *Var. γ*), while the weaker transition-form (*Var. β*) is dying out. But as long as no difference of *form* has arisen between the two chief varieties, and more particularly as long as an intermediate variety exists, all the varieties must of course be grouped together as one species.—It is remarkable, that whereas *Var. γ* (*E. pyramidata*) is not rare in England, *Var. α* (*E. marmorea*) has not yet been observed there.

Some interesting varieties of "*E. scalaris*" are mentioned by LUCAS ²), one for ex. where the large dark spot of the abdomen is longitudinally divided through the fore half. — CEDERHJELM has observed, that in one specimen of "*Ar. scalaris*" the yellow colour of the abdomen changed to purple-red ³).

SCOPOLI's and RISSO's above cited synonyms are very uncertain, especially the latter's. On the other hand I should not have a doubt that *E. insularis* HENTZ is a perfectly certain synonym, were not that spider indigenous in North America. — *Ar. regalis* PANZ., usually cited under *E. quadrata*, belongs undoubtedly to *E. marmorea*. — *Ar. ocellatus* CLERCK, which WALCKENAER (Ins. Apt., II, p. 47) refers to his *E. scalaris*, is a variety of *E. patagiata* (CLERCK) C. KOCH. — *E. Jenisonii* C. KOCH, which WALCKENAER considers as the same species as *E. marmorea*, is without doubt a separate species.

(Pag. 30.) 5. *E. quadrata* [= *Epeira quadrata* (CLERCK) 1757].

Syn.: 1757. ARANEUS QUADRATUS CLERCK, Sv. Spindl., p. 27, Pl. 1, tab. 3.

?1763. ARANEA RÉAUMURII SCOP., Ent. Carn., p. 393.

1) BLACKWALL has found that the number of spinning-tubes varies with the age of the spiders, and that sometimes it is not the same on the left and on the right spinner of the same pair! — Vid. BLACKW., On the numb. and struct. of the mammulæ etc. (Transact. of the Linn. Soc., XVIII, P. II, p. 222).

2) Hist. Nat. d. Crust., d. Arachn. et d. Myriap., p. 424. — Note sur une var. de l'Ép. scalaris (Ann. de la Soc. Ent. de France, 3 Sér., I, Bull., p. IV).

3) "... memoratu digna mihi visa est mutatio coloris sulphurei in colorem læte purpureum, quem aranea nostra, in scatula per spatium trium fere hebdomadum asservata et oblivionis vitio omni cibo destituta, induit." (Faunæ Ingricæ Prodromus, p. 194).

1778. ARANEA QUADRI-MACULATA DE GEER, Mém., VII, p. 223, Pl. 12, fig. 18.
 1805. EPEIRA QUADRATA WALCK., Tabl. d. Aran., p. 61.
 1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 324, Pl. XXIII, fig. 236.
 1866. „ „ MENGE, Preuss. Spinn., I, p. 53, Pl. 5, tab. 5.

GIEBEL ¹⁾ has under the name of *E. flava* described an in his opinion nearly related form from Germany and Switzerland. If the statement, that its abdomen is "vorn mit ausgeprägten Mittel- und Seitenecken", be correct, it is of course far removed from *E. quadrata*.

(Pag. 31.) 6. **E. umbratica** [= *Epeira umbratica* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS UMBRATICUS CLERCK. Sv. Spindl., p. 31, Pl. 1, tab. 7.
 1758. ARANEA SEX-PUNCTATA LINN., Syst. Nat., Ed. 10, I, p. 622.
 1763. „ SWAMMERDAMII SCOP., Ent. Carn., p. 393.
 1778. „ CICATRICOSA DEGEER, Mém., VII, p. 225, Pl. 12, fig. 19.
 1779. „ IMPRESSA FABR., Reise nach Norwegen, p. 359.
 1789. „ UMBRATICA VILL., Linn. Ent., IV, p. 129.
 1804. „ UMBRATICOLA LATR., H. N. d. Crust. et d. Ins., VII, p. 359.
 1804. „ LITTERATA PANZ., Syst. Nomencl., p. 244. (SCHÆFF., Ic. Ins. Ratisb., I, Tab. XXXVII, fig. 11).
 1805. EPEIRA UMBRATICA WALCK., Tabl. d. Aran., p. 61.
 1806. „ UMBRATICOLA LATR., Gen. Crust. et Ins., I, p. 105.
 ? 1850. „ PALLIDA C. KOCH, Uebers. d. Arachn.-Syst., 5, p. 13.
 1864. „ UMBRATICA BLACKW., Spid. of Gr. Brit., II, p. 333, Pl. XXIV, fig. 241.
 1866. „ „ MENGE, Preuss. Spinn., p. 55, Pl. 6, tab. 6.

FABRICIUS has loc. cit. so fully described his *A. impressa*, that no doubt can remain of its identity with *E. umbratica*. — Concerning *Ar. sex-punctata* LINN., vid. Rec. crit. Aran., p. 88.

E. silvicultrix C. KOCH and *E. bohémica* ID., placed by WALCKENAER among the synonyms of *E. umbratica*, do not belong to that species, at least not the latter, as its male without doubt belongs to *E. alsine* WALCK. (*E. lutea* C. KOCH) and its female either to *E. quadrata* or to *E. marmorea* (Conf. KOCH, Die Arachn., V, p. 59, figg. 376, 377). Vid. inf. under the rubric of *E. lutea* WESTR.

Even if *E. pallida* C. KOCH be a different species from *E. umbratica*, it cannot keep the specific name *pallida*, as that name was

1) Zur Schweitzer. Spinnen-Fauna (GIEBEL u. HEINTZ, Zeitschrift f. d. gesamt. Naturwissensch., XXX), p. 429.

already in 1789 given by OLIVIER (Encycl. Méthod., IV, p. 200) to another *Epeira*-species (*E. Olivieri* WALCK.) found in the south of France.

(Pag. 33.) 7. ***E. sclopetaria*** [= *Epeira sclopetaria* (CLERCK) 1757].

- Syn.: 1757. ARANEUS SCLOPETARIUS CLERCK, Sv. Spindl., p. 43, Pl. 2, tab. 3.
 1757. „ SERICATUS ID., ibid., p. 40, Pl. 2, tab. 1.
 1789. ARANEA UNDATA OLIV., Encycl. Méthod., IV, p. 206.
 1804. „ OVIGERA PANZ., Syst. Nomencl., p. 244. (SCHÆFF., Ic. Ins. Ratisb., Tab. CLXXIV, fig. 3).
 1833. EPEIRA SERICATA C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 120, 1.
 1834. „ VIRGATA HAHN, Die Arachn., II, p. 26, Taf. XLVI, fig. 113.
 1851. „ SCLOPETARIA WESTR., Förteckn. etc.¹⁾, p. 34.
 1864. „ SERICATA BLACKW., Spid. of Gr. Brit., II, p. 328, Pl. XXIII, p. 238.
 1864. „ SERICEA SIM., H. N. d. Araignées, p. 492.
 1866. „ SCLOPETARIA MENGE, Preuss. Spinn., p. 57, Pl. 7, tab. 7.

A. sclopetarius CLERCK is the *forma principalis* (at least here in Sweden) of the species, *A. sericatus* a *variety*, wherefore the species, ought to be called *E. sclopetaria*, not *sericata*. (Conf. THOR., On Eur. Spid., p. 16, note). It has been formerly by some authors confounded with the two following species, but is now almost universally known and acknowledged as an independent form. — *E. sclopetaria* C. KOCH is a different species and = *E. sollers* WALCK. *E. sclopetaria* HAHN is again another species, nearly related to, or possibly identical with *E. armida* SAV. et AUD. (On this species vid. p. 24: *E. ceropegia* WESTR.). — Concerning *Ar. sclopetarius* CLERCK see also Rec. crit. Aran., p. 22. In and around Stockholm this species is not uncommon. I have received specimens from Austria from Dr REDTENBACHER. — On *Ar. virgatus* CLERCK vid. sup., p. 7.

(Pag. 34.) 8. ***E. cornuta*** [= *Epeira cornuta* (CLERCK) 1757].

- Syn.: 1757. ARANEUS CORNUTUS CLERCK, Sv. Spindl., p. 39, Pl. 1, tab. 11.
 1785. ARANEA FOLIATA FOURCR., Ent. Par., II. (Cfr. VILL., Linn. Ent., IV, p. 26).
 ?1789. „ UMBRATICA OLIV., Encycl. Méthod., IV, p. 201.

1) Förteckning öfver till närvarande tid kända, i Sverige förekommande spindelarter (Göteborgs K. Vetenskaps- och Vitterhets-Samhälles Handlingar, Ny Tidsföljd, Hft. 2).

1802. ARANEA APOCLISA WALCK., Faune Par., II, p. 195 (*ad partem*).
 1803. „ FOLIUM SCHRANCK, Fauna Boica, III, 1, p. 240.
 1805. EPEIRA APOCLISA WALCK., Tabl. d. Aran., p. 61 (*ad partem*).
 1835. „ ARUNDINACEA C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 131,
 18—20.
 1851. „ CORNUTA WESTR., Förteckn. etc., p. 34.
 1864. „ APOCLISA BLACKW., Spid. of Gr. Brit., II, p. 325, Pl. XXIII,
 fig. 237.
 1866. „ CORNUTA MENGE, Preuss. Spinn., I, p. 58, Pl. 8, tab. 8.

This spider, which by some writers, as WALCKENAER and SUNDEVALL, has been confounded with the following, and even sometimes with the preceding, under the name of *E. apoclisa*, has been by WESTRING restored to its original Clerckian name, *E. cornuta*. LINNÉ'S *Ar. arundinacea* does not, as C. KOCH supposes, belong to this species, but to WALCKENAER'S *Theridium benignum*: at any rate CLERCK'S denomination is the oldest, and its belonging to the species before us questioned by nobody. C. KOCH has erroneously¹⁾ cited *Ar. marmorea* SCHRANCK²⁾ — which is the same as *Ar. marmoreus* CLERCK — under his *E. arundinacea*. — This widely spread species is among those observed by me at Nice.

As regards *E. cornuta* WALCK., DOLESCH. and SIM., vid. supr. (p. 5—7) under *E. angulata* WESTR. — *Ar. cornuta* PALLAS³⁾ is a *Nephila*.

(Pag. 36.) 9. ***E. patagiata*** [= *Epeira patagiata* (CLERCK) 1757].

- Syn.: 1757. ARANEUS PATAGIATUS CLERCK, Sv. Spindl., p. 38, Pl. 1, tab. 10.
 1757. „ OCELLATUS ID., ibid., p. 36, Pl. 1, tab. 9.
 1776. ARANEA ANGULATA SULZ., Abgek. Gesch. Schweitz. etc. Ins., p. 254,
 Tab. 29, fig. 13 (*sec. C. KOCH*).
 ?1789. „ LACERA OLIV., Encycl. Méthod., IV, p. 201.
 ?1789. „ DUMETORUM VILL., Linn. Ent., IV, p. 126.
 1802. „ APOCLISA WALCK., Faune Par., II, p. 195 (*ad partem*).
 1805. EPEIRA „ ID., Tabl. d. Aran., p. 61 (*ad partem*).
 1834. „ DUMETORUM HAHN, Die Arachn., II, p. 31, Taf. XLVIII, fig. 117.
 ?1834. „ NAUSEOSA C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 123, 20.
 ?1836. „ MUNDA ID., ibid., 134, 4.
 1845. „ PATAGIATA ID., Die Arachn., XI, p. 115, Taf. CCCLXXXVI,
 fig. 916—919.
 1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 329, Pl. XXIV,
 fig. 239.

1) Die Arachn., XI, p. 109.

2) Fauna Boica, III, 1, p. 233.

3) Spicil. zool., fasc. 9, p. 44, Tab. III, fig. 13.

- E. nauseosa* C. KOCH (with its variety *E. munda* id. ')), which KNEWALL supposes may belong to the preceding species (*E. apoclista* KNEW.), appears to me to be nothing more than a variety of *E. patula*, from which, according to KOCH himself (Die Arachn., XI, p. 131), it is difficult to distinguish it. — Prof. OHLERT has kindly sent me a ♂ and a ♀ of his *E. silvicultrix*, which I cannot distinguish from *E. patula*. *E. silvicultrix* C. KOCH is certainly not the same as this species (Conf. Die Arachn., XI, p. 131, Tab. CCCXC, figg. 932, 933).

Syn.: 1802. ARANEA ALSINE WALCK., Faune Par., II, p. 193.
 1805. EPEIRA „ ID., Tabl. d. Aran., p. 59.
 1837. „ LUTEA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 3.
 1839. „ BOHEMICA ID., Die Arachn., V, p. 59, Taf. CLXI, fig. 376
 (♂; non ♀).
 1864. „ LUTEA BLACKW., Spid. of Gr. Brit., II, p. 345, Pl. XXV, fig. 249.
 1866. „ „ MENGE, Preuss. Spinn., I, p. 61, Pl. 9, tab. 10.

1) BLACKWALL has described under the name of *E. munda* an *Epeira* from Brazil: see BLACKW., Descr. of newly disc. Spid. capt. in Rio Janeiro, in Ann. and Mag. of Nat. Hist., 3 Ser., XI, p. 33.

are, as is known, often extremely faulty. C. KOCH has, it is true, (Die Arachn., XI, p. 122, figg. 924, 925) described another, to me unknown species under the name of "*E. alsina*"; but a comparison of the figures here cited shows clearly that this latter species differs much more from *E. alsine* WALCK. than does "*E. lutea*." *E. alsina* C. KOCH appears to be very nearly related to *E. patagiata* (CLERCK). — The male of *E. bohémica* C. KOCH (Die Arachn., V, p. 59) certainly belongs to *E. alsine* or *lutea*, as also MENGE (loc. cit.) assumes.

(Pag. 40.) 11. ***E. conica*** [= ***Cyrtophora conica*** (PALLAS) 1772].

- Syn.: 1772. ARANEA CONICA PALL., Spicil. zool., I, 9, p. 48, Tab. I, fig. 16.
 1776. „ TRIQUETRA SULZ., Abgek. Gesch. etc., p. 254, Tab. 30, fig. 3¹).
 1778. „ CONICA DE GEER, Mém., VII, p. 231, Pl. 13, figg. 16—20.
 1805. EPEIRA CONICA WALCK., Tabl. d. Aran., p. 64.
 1837. SINGA „ C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 6.
 1864. EPEIRA „ BLACKW., Spid. of Gr. Brit., II, p. 362, Pl. XXVII, fig. 261.
 1866. CYCLOSA „ MENGE, Preuss. Spinn., I, p. 74, Pl. 12, tab. 18.
 1869. CYRTOPHORA CONICA THOR., On Eur. Spid., p. 57.

PALLAS had, as is perceived, before DE GEER given the name of *conica* to this species. — "*Ar. triquetra* PALL.", which NORDMANN²⁾ takes up as a synonym of *E. conica*, is no doubt a slip of the pen for "*A. triquetra* SULZER." — On the genus *Cyrtophora* (SIM.) vid. THOR., On Eur. Spid., p. 57.

(Pag. 41.) 12. ***E. sollers*** [= ***Epeira sollers*** WALCK. 1830].

- Syn.: ?1802. ARANEA CRATERA WALCK., Faune Par., II, p. 197.
 1804. „ „ PANZ., Syst. Nomencl., p. 244 (SCHAEFF., Ic. Ins. Ratisb., I, Tab. XLIX, fig. 5).
 1830. [EPEIRA SOLERS] "ÉPEIRE ADROITE" WALCK., Faune Franç., Arachn., Pl. 9, fig. 7. (Cfr. WALCK., Tabl. d. Aran., p. 60).
 1834. „ AGALENA HAHN, Die Arachn., II, p. 29, Taf. XLVII, fig. 115.
 1837. ATEA SCLOPETARIA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 4.
 1841. EPEIRA SOLERS WALCK., H. N. d. Ins. Apt., II, p. 41.
 1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 336, Pl. XXIV, fig. 243.
 1866. „ „ MENGE, Preuss. Spinn., I, p. 63, Pl. 9, tab. 11.

1) Conf. GÖZE and MARTINI, LISTER's Naturgesch. d. Spinnen, p. 262.

2) Erstes Verzeichniss der in Finnland u. Lappland gefundenen Spinnen, Aranæ (in Bidrag till Finlands naturkännedom, etnografi och statistik, VIII), p. 10.

The name *E. solers* is already met with in WALCKENAER's Tabl. d. Aranéides, p. 60, but without any description of the species intended. In the Faune Franç., Arachn., loc cit., WALCKENAER published an easily recognizable figure (without description) of that spider under the French name "*Épéire adroite*," which is used in Tabl. d. Aran. as a French equivalent to the Latin *E. solers*. It was first in 1841, in his H. N. d. Ins. Apt., II, that he described the species under this latter name. I however think it right to reckon priority from the date of Faune Franç., loc. cit. — *E. sollers* is numbered by BLACKWALL¹⁾ among the spiders met with in the south-eastern part of central Africa. — The orthography *sollers* appears preferable to that of *solers*.

The name *Aranea cratera* WALCK. has been used by PANZER loc. cit. for a figure in SCHÆFFER's Icones Ins. Ratisb., evidently representing *Ep. sollers*. WALCKENAER himself referred that figure to his *Epeira cratera*, and it is therefore not improbable, that *E. cratera* is identical with *E. sollers*, in which case the former name will have right of priority in preference to the latter. Conf. also WALCK., Ins. Apt., II, p. 41, where he says of *E. sollers*: "par sa forme, comme par ses habitudes elle se rapproche de l'*Epeira cratera*."

The names given by HAHN as synonyms, *Ar. or Ep. agalena* WALCK., and *Ar. x-notatus* CLERCK, belong to totally different species. The same may be said of *Ar. scolopetarius* CLERCK, which C. KOCH cites under this species. Vid. sup., p. 15: *E. scolopetaria* WESTR., as also *E. agalena* and *Zilla x-notata* ID. farther on.

(Pag. 44.) 13. **E. bicornis** [= *Epeira omæda* N.].

- Syn.*: 1833. *EPEIRA ANGULATA* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 234 (*ad partem*: "pulluli").
 1851. ,, *BICORNIS* WESTR., Förteckn. etc., p. 35.
 1851. ,, *ULRICHII* ID., *ibid*.
 1856. ,, *BICORNIS* THOR., Rec. crit., p. 9.

In Rec. crit. Aran. (p. 9, note) I expressed a doubt, whether the spider there defined by WESTRING and myself as *E. bicornis* WALCK., really were that species. The ground on which my doubt then rested was the more considerable size of the Swedish form: ♂ ad., and even

1) List of Spid. captured in the south-east region of equat. Africa (*in Ann. and Mag. of Nat. Hist.*, 3 Ser., XVII), p. 461.

a ♀ jun. of this species are in fact 9^{mm.} long, whereas *E. bicornis* is stated to be but 4½^{mm.}. Neither is the *E. bicornis* described by BLACKWALL (Spid. of Gr. Brit., II, p. 361, Pl. XXVII, fig. 260) more than ⁵/₂₄ inch" (about 5^{mm.}) long. This spider, of which the Rev. Mr. CAMBRIDGE presented me with a ♂ specimen, and which appears to me fully to correspond with WALCKENAER's figures of *E. bicornis* (H. N. d. Aranéides, 2, fig. 2; Faune Franç., Arachn., Pl. 9, fig. 5), shows also some deviations in form from *E. bicornis* WESTR.; I am therefore obliged to consider this latter as a distinct species separate from the true *E. bicornis* WALCK., BLACKW., and I call it *E. omæda*¹⁾. In *E. omæda* ♂, the undersides of the coxæ of the 1st pair of legs are at their extremity, outwards, armed with a very strong thorn pointing downwards, and the coxæ of the 2nd pair are smooth below: in *E. bicornis* WALCK. and BLACKW. ♂, that thorn is much smaller, and the coxæ of the 2nd pair have on the corresponding place a small, very blunt tubercle. In the former the thighs of all the legs are armed below with a row of spines, and of the spines with which the underside of the thighs of the 4th pair is armed, that which is situated nearest the base is far stronger than the others. In *E. bicornis* BLACKW. ♂, the thighs of the 1st pair are without spines below, and the spine nearest the base on the underside of the 4th pair is not stronger than the others. In *E. omæda* the eye-area is perpendicular, and forms, seen from the side, a right angle with the back of the pars cephalica: in *E. bicornis* BLACKW. that area is somewhat sloping. The male's bulbus genitalis in *E. omæda* exhibits on the outer side an easily perceptible, large, curved appendage, thicker at the base and tapering towards the middle, and thence rapidly dilated on both sides, like a hammer or rather a dolphin's tail. (Conf. Rec. crit. Aran., loc. cit.). In BLACKWALL's *E. bicornis* there is no such appendage to the bulbus genitalis. In ♂ of both species the tibiæ of the 2nd pair of legs are somewhat incrassated, thicker towards the base, and armed on the inner side with long spines. The female's vulva in *E. omæda* displays a short, broad corpus, which on the anterior (inferior) side has 3 longitudinal, converging furrows: from its apex rises a conically pointed scapus, which is very short, though longer than it is broad.

E. bicornis MENGE (Preuss. Spinn., I, p. 66), in ♂ of which the anterior central eyes are somewhat more widely separated than

1) ὠμοειδής, with tumid or large shoulders.

the posterior ones, is identical with *E. dromedaria* WALCK. The statement, that the coxæ of the 2nd pair of legs are on the upper margin armed with a tooth, is a *lapsus calami*; the tooth or thorn in MENGE's spider is situated on the underside of the coxæ of the first pair of legs, as MENGE has kindly informed me in a letter. — *E. bicornis* C. KOCH (Die Arachn. XI, p. 92, Taf. CCCLXXXIII, fig. 902, 903) is probably identical with *E. bicornis* WALCK. and BLACKW., with which it agrees in size. This is also the case with the spider which SILL describes under the name of "*E. bicornis* KOCH" (Zweit. Beitrag etc. 1), p. 201: "Länge 2—3"").

The specific name *bicornis* ought however not to be retained for any one of the species here mentioned. It had already been given by GMELIN²⁾ to a spider described by LEPECHIN³⁾ and nearly related to *E. angulata*, perhaps identical with *E. regia* or *E. Schreibersii*, and which afterwards received from KRYNICKI⁴⁾ the name *E. Lepechini*. The species called by C. KOCH *E. bicornis* ought to be named *E. arbustorum* C. KOCH, by which name it is described in Uebers. d. Arachn.-Syst., 1, p. 3. It is however very probable, that some of the species described by WALCKENAER under the names *E. gibbosa*, *E. cruciata* and *E. furcata* is only a variety of his *E. bicornis*, which I suppose is quite as variable in the colour of the abdomen, as are *E. angulata*, *E. omæda* and *E. dromedaria*.

(Pag. 47.) 14. *E. dromedaria* [= *Epeira dromedaria* WALCK. 1802.]

- Syn.: 1802. ARANEA DROMEDARIA WALCK., Faune Par., II, p. 191.
 ?1802. „ BITUBERCULATA ID., ibid.
 1804. „ ALBO-ARCUATA PANZ., Syst. Nomencl., p. 244. (SCHÆFF., Ic. Ins. Ratisb., II, Tab. CLXXII, fig. 7.
 1805. EPEIRA DROMEDARIA WALCK., Tabl. d. Aran., p. 58.
 ?1805. „ BITUBERCULATA ID., ibid.
 ?1834. „ ULRICHII HAHN, Die Arachn., II, p. 66, Taf. LXVIII, fig. 158.
 1866. „ BICORNIS MENGE, Preuss. Spinn., I, p. 66, Pl. 10, tab. 13.

1) Zweiter Beitr. z. Kenntn. d. Crust. u. Arachn. Siebenbürgens, in Verhandl. u. Mittheil. d. Siebenbürg. Vereins f. Naturwissensch. zu Hermannstadt, XII (1861).

2) LINN., Syst. Nat., Ed. 13, T. I, Pars V, p. 2959. (1789?)

3) Tagebuch d. Reise durch verschied. Provinzen d. Russ. Reiches, I, p. 245, Pl. XVI, fig. 13.

4) Arachnographiæ Rossicæ Decas prima (Bull. de la Soc. Imp. d. Naturalistes de Moscou, Année 1837, N:o V), p. 78.

WESTRING'S description fully coincides with the specimens in my collection of *E. dromedaria* from France and Germany, and which WESTRING has recognized as identical with his *E. dromedaria*. — The male, in which the tibiae of the second pair are somewhat thickened, with two rows of spines on the anterior side (six stronger spines in the one row, and 4 smaller in the other), has a rather strong curved tooth or thorn at the extremity, below, of the coxae of the 1st pair of legs. The thighs are, with exception of those of the 1st pair, armed with a row of spines on the underside. The bulbus genitalis has an appendage pretty much like that mentioned in the preceding species, *E. omæda* or *E. bicornis* WESTR., but this apophysis is much shorter and thicker than in *E. omæda*. As in this last, the basal spine on the underside of the thighs of the 4th pair is situated on a small high tubercle. Both sexes are easily distinguished both from *E. omæda* and from *E. bicornis* BLACKW. by the area of the 4 central eyes being in *E. dromedaria* very sloping; in the former two species this area is exactly quadrate or even slightly broader behind, whereas in *E. dromedaria* it is in general somewhat broader in front, at least in the males, the distance between the anterior central eyes being a little greater than between the posterior.

E. bituberculata WALCK. (Ins. Apt., II, p. 125) seems hardly to be specifically distinct from *E. dromedaria*. — C. KOCH (Die Arachn., XI, p. 98) erroneously cites, "CLERCK, Ar. Suec., Pl. I, tab. 1, fig. 1", which figure does not belong to this species, but to *E. angulata* (CLERCK). — Concerning *E. bicornis* MENGE, see preceding species, *E. bicornis* WESTR.

(Pag. 49.) 15. *E. Westringii* [= *Epeira Westringii* THOR. 1856].

Syn.: 1856. *EPEIRA WESTRINGII* THOR., Rec. crit. Aran., p. 106.

The male of *E. Westringii* is very similar to that of *E. cucurbitina*, but is easily distinguished by his not having the dark lateral bands on the cephalothorax, which the latter has. — This beautiful species, which is not registred as met with either in Germany, France or England, has been found by v. NORDMANN on the southern coast of *Crimea*, among the prickles of *Pinus taurica* 1).

1) v. NORDMANN, Erstes Verzeichn. etc., p. 11.

(Pag. 50.) 16. *E. cucurbitina* [= *Epeira cucurbitina* (CLERCK) 1757.]

- Syn.*: 1757. ARANEUS CUCURBITINUS CLERCK, Sv. Spindl., p. 44, Pl. 2, tab. 4.
 1758. ARANEA CUCURBITINA LINN., Syst. Nat., Ed. 10, I, p. 620.
 1763. „ FRISCHII SCOP., Ent. Carn., p. 395.
 1767. „ OCTO-PUNCTATA LINN., Syst. Nat., Ed. 12, I, p. 1030.
 1775. „ SENOCULATA FABR., Syst. Ent., p. 433.
 ?1775. „ TRICUSPIDATA ID., ibid.
 1778. „ VIRIDIS-PUNCTATA DE GEER, Mém., VII, p. 233, Pl. 14,
 figg. 1—3.
 1805. EPEIRA CUCURBITINA WALCK., Tabl. d. Aran., p. 63.
 1839. MIRANDA „ C. KOCH, Die Arachn., V, p. 53, Taf. CLIX,
 figg. 371, 372.
 ?1853. EPEIRA SQUAMOSA SEIDEL, Ueb. d. Schlesischen Arten aus d. Fam.
 d. Epeir. u. Ther.¹⁾, p. 110.
 1864. „ CUCURBITINA BLACKW., Spid. of Gr. Brit., II, p. 342, Pl.
 XXV, fig. 247.
 1866. MIRANDA „ MENGE, Preuss. Spinn., I, p. 68, Pl. 10, tab. 14.

(Pag. 51.) *E. adianta* [= *Epeira adianta* WALCK. 1802].

- Syn.*: 1802. ARANEA ADIANTA WALCK., Faune Par., II, p. 199.
 1804. „ MARMOREA PANZ., Syst. Nomencl., p. 243. (SCHLÆFF., Ic. Ins.
 Ratisb., I, Tab. XIX, fig. 12).
 1805. EPEIRA ADIANTA WALCK., Tabl. d. Aran., p. 60.
 1833. „ SEGMENTATA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.
 f. 1832, p. 247.
 1839. MIRANDA PICTILIS C. KOCH, Die Arachn., V, p. 50, Taf. CLVIII, fig. 369.
 1864. EPEIRA ADIANTA BLACKW., Spid. of Gr. Brit., II, p. 348, Pl. XXV,
 fig. 251.
 1866. MIRANDA „ MENGE, Preuss. Spinn., I, p. 69, Pl. 11, tab. 15.

Ar. segmentatus CLERCK, which SUNDEVALL and WALCKENAER (Ins. Apt., II, p. 63) cite under this species, is = the *Ep. inclinata* of these writers. Vid. inf. under the head of *Meta segmentata* WESTR. *E. scolopetaria* HAHN is also erroneously quoted by WALCKENAER under *E. adianta*. Of HAHN's *E. scolopetaria* we shall presently speak, when we come to *E. ceropegia* WESTR. (See next page).

(Pag. 53.) 18. *E. agalena* [= *Epeira agalena* WALCK. 1802].

- Syn.*: 1802. ARANEA AGALENA WALCK., Faune Par., II, p. 197.
 1805. EPEIRA „ ID., Tabl. d. Aran., p. 59.

1) Uebersicht d. Arbeiten u. Veränderungen d. Schlesischen Gesellschaft für Vaterländische Kultur im Jahre 1848.

1831. *EPEIRA STURMII* HAHN, Die Arachn., I, p. 12.
 1837. *ATEA* „ C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 3.
 1845. „ *AGALENA* ID., Die Arachn., XI, p. 137, Taf. CCCXCI, figg.
 936—938.
 1864. *EPEIRA* „ BLACKW., Spid. of Gr. Brit., II, p. 334, Pl. XXIV,
 fig. 242.
 1866. „ „ MENGE, Preuss. Spinn., I, p. 65, Pl. 10, tab. 12.

Ar. x-notatus CLERCK, quoted by WALCKENAER (Ins. Apt., II, p. 36) under the head of his *E. agalena*, is = his *E. calophylla* (vid. inf.: *Zilla x-notata* WESTR.). Neither is C. KOCH's *Zilla albimacula* synonymous with *E. agalena*, but undoubtedly with *E. diodia* WALCK.

(Pag. 55.) 19. *E. ceropegia* [= *Epeira ceropegia* WALCK. 1802].

- Syn.: 1802. *ARANEA CEROPEGIA* WALCK., Faun. Par., II, p. 199.
 1805. *EPEIRA* „ ID., Tabl. d. Aran., p. 60.
 1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 347, Pl. XXV,
 fig. 250.
 1866. „ „ MENGE, Preuss. Spinn., I, p. 72, Pl. 11, tab. 17.

The species that WESTRING, BLACKWALL and MENGE describe as *E. ceropegia*, and which is undoubtedly the right *E. ceropegia* WALCK., is quite different from *E. ceropegia* C. KOCH¹⁾ or *E. scolopetaria* HAHN²⁾, which last WALCKENAER has erroneously taken up among the synonyms of his *E. adianta*³⁾. Of *E. ceropegia* WALCK. et WESTR., I possess only an undeveloped female, 4^{mm}. long, which WESTRING himself gave me. When full-grown it is according to WALCKENAER⁴⁾ only "2½ lignes," i. e. less than 6^{mm}., according to BLACKWALL and MENGE a little larger: ♂ being according to the former "3/10 inch" or about 7½^{mm}., ♀ according to the latter 9^{mm}. *E. ceropegia* C. KOCH on the contrary is far larger, and according to HAHN attains a length of 7 lines (about 16^{mm}.). I have myself specimens, which I have received from Dr REDTENBACHER, one of which is above 15^{mm}. long (the cephalothorax 6^{mm}., the legs of the 1st pair 21—22^{mm}.). The form of the abdomen is moreover entirely different, being drawn out in front into a very short, blunt process; viewed from the side it is *obliquely cut off at the extremity*, so that the spinners be pretty far in front of and below the projecting, rounded apex of the abdomen (Conf.

1) HERR.-SCHÄFF., Deutschl. Ins., 126, 12, 13; — Die Arachn., V, p. 51, fig. 370.

2) Die Arachn., II, p. 46, fig. 131.

3) H. N. d. Ins. Apt., II, p. 53.

4) Loc. cit., p. 51.

Koch's figure in *Die Arachn.*, loc. cit.). The scapus of the vulva is rather *long*, though not so long as in *E. diademata*, thick, soft, closely and transversally striped, yellowish, turned down towards the end at an obtuse angle, and there tapering to a fine conical point. (In *E. ceropegia* WALCK., according to MENGE, it is *short* and *conical*). Both the thighs and the tibiae are armed with several strong spines; the tibiae and metatarsi have a dark ring in the middle and at the end. In two fullgrown female specimens (from Dalmatia), the first of the two anterior triangular divisions of the yellowish leaf-like design along the back of the abdomen appears somewhat broader than the second: in an incompletely developed but almost equally large female from Steyermark the second is broader than the first, as is also the case in *E. ceropegia* WALCK. and in *E. adianta*. The belly has, like that of *E. ceropegia* WALCK., a longitudinal yellow central mark and 4 or 6 little yellow spots round the spinners. *E. ceropegia* C. KOCH is very like *E. Armida* SAV. et AUD.¹⁾, but the scapus vulvæ of this latter seems to be considerably longer²⁾: the lateral bands of the abdomen are also much more sharply and deeply indented in *E. Armida*³⁾ than in *E. ceropegia* C. KOCH, which we for the present consider as a separate species, and call *E. Victoria*.

In the immature female of *E. ceropegia* WALCK. the lateral eyes are, as WESTRING has remarked, scarcely farther removed from the central eyes than these latter from each other. But in fullgrown specimens, according to MENGE's figures, as also in *E. adianta*, *E. Victoria* and others, the distance between the lateral and central eyes is considerably greater than the interval between these last.

I suppose the name *ceropegia* is formed of *κηρός*, wax, and *πῆγνυμι*, fix (or *πηγός*, white?), on account of the wax-yellow design of the abdomen, not of *κέρας*, horn, and *πῆγνυμι*, as MENGE believes.

(Pag. 56.) II. SINGA [= *Singa* (C. KOCH) 1836 + *Cercidia* THOR. 1869].

See on these genera: THOR., On Eur. Spid., p. 58.

1) Descr. de l'Égypte (2 Éd.): XXII, p. 337, Pl. II, fig. 8.

2) Loc. cit., fig. 8, m.

3) Loc. cit., fig. 8, 2.

(Pag. 57.) 1. *Singa Herii* [= *Singa pygmæa* (SUND.) 1830].

- Syn.: 1830. *THERIDIUM PYGMÆUM* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.
f. 1829, p. 121 (*ad partem*: ♀).
 ?1831. *EPEIRA TUBULOSA* HAHN, Die Arachn., I, p. 10, Taf. II, fig. 6.
 1837. *MICRYPHANTES ANTHRACINUS* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 11.
 1839. *PHRUROLITHUS TRIFASCIATUS* ID., Die Arachn., VI, p. 116, Taf. CCVIII,
fig. 516.
 1845. *SINGA TRIFASCIATA* ID., *ibid.*, XI, p. 151, Taf. CCCXCIII, fig. 948.
 1845. „ *ANTHRACINA* ID., *ibid.*, p. 154, Taf. CCCXCIII, fig. 950.
 ?1845. „ *SERRULATA* ID., *ibid.*, p. 153.
 1851. *EPEIRA NIGRIFRONS* WESTR., Förteckn. etc., p. 59.
 1851. „ *TRIFASCIATA* ID., *ibid.*
 1864. „ *ANTHRACINA* BLACKW., Spid. of Gr. Brit., II, p. 357, Pl.
XXVI, fig. 257.
 1864. „ *HERII* ID., *ibid.*, p. 366, Pl. XXVII, fig. 264.

That SUNDEVALL's above mentioned *Theridium pygmæum* "atrum nitidum, pedibus testaceis, abdomine feminæ albo-lineato," as the description runs, is the same species as that here described by WESTRING, i. e. *Singa trifasciata* C. KOCH, although SUNDEVALL has confounded with it a little *Linyphia*, is evident not only from SUNDEVALL's description, but from the circumstance that WESTRING saw that *Singa* in SUNDEVALL's own collection of spiders under the name of *Theridium pygmæum* (Vid. WESTR., p. 127. On the subject of *Ther. pygmæum* SUND. see also farther on, under *Linyphia pygmæa* WESTR.). The specific name *pygmæa*, which is accordingly the oldest by which *Singa trifasciata* has been designated, I consider myself bound to restore. — *Singa (Epeira) anthracina* C. KOCH and BLACKW. is the male to *S. pygmæa* or *trifasciata*: I have not unfrequently in Uppland and Westmanland taken both sexes together. WESTRING was unacquainted with the male. — *Singa serrulata* C. KOCH (= *Ep. tubulosa* HAHN) is probably only a variety of this species.

It seems on the other hand certain, that the real *Epeira Herii* HAHN¹⁾ (with its variety *S. nigrifrons* C. KOCH) is quite another species than *S. trifasciata* or *pygmæa*. The ♀-specimens of *S. Herii* from Germany (Nürnberg), which I have received from Dr L. KOCH, are not only something larger than my Swedish and English specimens of *S. pygmæa* ♀, and of a different colour, but also somewhat un-

1) Die Arach., I, p. 8, Taf. II, fig. 5.

like them in form. In *S. Herii* the cephalothorax is reddish brown, with the head of the same colour or dark-brown, whereas the cephalothorax of *S. pygmaea* is entirely dark-brown, only with in general lighter, yellowish side-borders. The abdomen of *S. Herii* is yellowish, with two narrow blackish bands on the back, which are sometimes resolved into a row of spots, and sometimes are very faint; in *S. pygmaea* the abdomen is dark-brown, with three yellow or whitish, narrow bands along the back, of which sometimes the middle, sometimes the two side bands may be more or less obliterated. (In the adult ♂ of *S. pygmaea* the cephalothorax and abdomen are of a uniform dark-brown colour.) In *S. Herii* the abdomen seems to me to be more elongated in front, the rounding off there being somewhat pointed, not uniform, as in *S. pygmaea*. In this last the quadrangle formed by the 4 central eyes is, strictly speaking, a hairsbreadth narrower in front, which appears to me not to be the case in *S. Herii*. My opinion is, that all these differences together indicate that *S. Herii* and *S. pygmaea* or *trifasciata* are two different species.

Six²⁾ believes that C. Koch's *S. serrulata* (*E. tubulosa* HAHN), *nitidula*, *trifasciata*, *Herii* and *nigrifrons* all belong to one and the same species, which, when young, has white bands, afterwards yellow and at last orange-coloured. As he does not mention any other distinguishing mark of the forms he speaks of, it is impossible to know whether they all belong to our *S. pygmaea*, or whether some of them may not belong to other forms, as e. g. the above so often mentioned *S. Herii* (HAHN) which, as well as the to me unknown *S. nitidula*, I look upon as a separate species. I ought to mention that, even among full-grown females of *S. pygmaea*, examples occur with whitish bands, and accordingly that colour is not exclusively confined to young individuals. An accurate comparison of the organs of copulation in both sexes of all the spiders in question would probably be necessary in order to determine with certainty, which of them are independent species and which mere varieties.

1) SIX (Lijst van Spinnen in de Provincie Utrecht gevonden, in HERKLOTZ, Bouwstoffe voor eene Fauna van Nederland, II, p. 293) says that he found several males of *S. trifasciata* "with more or less evanescent bands on the abdomen." Were not the individuals, in which these band were still visible, young, as yet not full-grown specimens?

2) Opmerkingen omtrent de kleurverandering van *Ep. Herii* (Tijdschrift voor Entomologie, I) p. 188.

Though BLACKWALL in the description of his *Epeira Herii* does not mention the generally occurring yellowish side-borders of the cephalothorax, that species belongs unquestionably to *S. pygmaea*, and not to *S. Herii* (HAHN). Specimens from England, which I have received from the Rev. Mr. CAMBRIDGE under the name of *E. Herii* BLACKW., agree also perfectly with the Swedish *Singa pygmaea*. — Among the varieties of *S. Herii*, which WESTRING describes (as younger individuals of the species), specimens of the real *S. Herii* may possibly have occurred: but his "Var. a, seniores" are merely *S. pygmaea* or *trifasciata*. Similarly the specimens of his Var. c and Var. d, which he has sent me. In these young individuals the colour is a lighter brown than in the fullgrown, and no yellow border to the cephalothorax visible: in other respects they are precisely similar to fullgrown specimens. All the individuals that I have captured, both fullgrown and young, belong to WESTRING's Var. a, which is no rarity in central Sweden.

(Pag. 59.) 2. *S. albo-vittata* [= *Singa albo-vittata* WESTR. 1851].

- Syn.*: 1851. EPEIRA ALBO-VITTATA WESTR., Förteckn. etc., p. 36.
 1852. „ CALVA BLACKW.. Descr. of some newly disc. spec. of Aran.,
 in Ann. and Mag. of Nat. Hist., 2 Ser., X, p. 99.
 1864. „ „ ID., Spid. of Gr. Brit., II, p. 365, Pl. XXVII, fig. 263.
 1866. SINGA ALBO-VITTATA MENGE, Preuss. Spinn., I, p. 84, Pl. 13, tab. 23, K.

WESTRING'S specific name, *albo-vittata*, has, as is here seen, priority before that given by BLACKWALL.

(Pag. 61.) 3. *S. melanocephala* [= *Singa hamata* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS HAMATUS CLERCK, Sv. Spindl., p. 51, Pl. 3, tab. 4.
 1789. ARANEA HAMATA OLIV., Encycl. Méth., IV, p. 210.
 1802. „ TUBULOSA WALCK., Faun. Par., II, p. 200.
 1805. EPEIRA „ ID., Tabl. d. Aran., p. 62.
 1836. SINGA HAMATA C. KOCH, Die Arachn., III, p. 42, Taf. LXXXVIII, figg. 197, 198.
 1836. „ MELANOCEPHALA ID., ibid., p. 44, Taf. LXXXVIII, fig. 199.
 1851. EPEIRA „ WESTR., Förteckn. etc., p. 36.
 1856. ZILLA HAMATA THOR., Rec. crit., p. 107.
 1864. EPEIRA TUBULOSA BLACKW., Spid. of Gr. Brit., II, p. 364, Pl. XXVIII, fig. 262.
 1866. SINGA HAMATA MENGE, Preuss. Spinn., I, p. 82, Pl. 13, tab. 22.

Of this species WESTRING had only met with young, immature specimens: in such the head is sometimes darker than the cephalothorax, and the legs without rings. In fully developed individuals the cephalothorax is uniformly dark brown, and the joints of the legs, especially the foremost thighs, darker towards the end. That WESTRING'S *S. melanocephala* is the same as C. KOCH'S *S. hamata*, is so much the more certain, as that WESTRING received from me some of the specimens he has described; I have also since found both male and female fullgrown individuals of that species at Sättra in Westmanland, which KOCH'S description of *S. hamata* exactly suits, and which in no respect differ from the 'specimens of *S. hamata*, which I collected at Kissingen in Bavaria. Moreover C. KOCH'S *S. melanocephala* is most assuredly nothing more than a variety of *S. hamata* (probably taken immediately after the shedding of the skin), as both BLACWALL and MENGE supposed.

WESTRING doubts whether CLERCK'S *Ar. hamatus* be identical with the spider before us, but certainly without reason. That *S. hamata* C. KOCH is not to be found in CLERCK'S original collection of spiders, proves nothing, for this is also the case with many other spiders which CLERCK unquestionably has described. (Vid. THORELL, Om CLERCK'S original-spindelsamling, in Öfversigt af Vet.-Akad. Förhandl., 1858, p. 147). That CLERCK reckoned *Ar. hamatus* among his "*Irregulares*" or the family *Theridioidæ*, should the less astonish us, as the genus *Singa* shows really no small analogy with that family, and even a so distinguished arachnologist as SUNDEVALL could describe another species of the genus (*S. pygmaea*) as a *Theridium*. CLERCK had never seen the web of this species, and his mistake is therefore quite excusable. WESTRING himself says of *Singa* (p. 51): "*Retia mihi ignota*"¹⁾.

1) P. 15 we find: "*Retia generis Singæ ignota*." This is however a mistake, for already LISTER says of his "*Tit. VII, Araneus pullus cruciger glaber, albo plena ovali*," or our *Singa hamata*: "*Medio Maio, si faveat tempestas serena, reticula orbiculata conficiunt prope nidos*" (Hist. Anim. Angl. tres tract., unus de Araneis etc., p. 41); and of the same species (*Ar. tubulosa* LATR.), LATREILLE says: "*Elle fait sur les buissons et dans les blés une toile verticale et se pratique à la partie supérieure, sous une feuille, un petit tube assez long de soie blanche et serrée où elle est à l'affût de sa proie*." (Hist. Nat. d. Crust. et d. Ins., VII, p. 263). — The web of *S. Herii* is mentioned by HAHN (Die Arachn., I, p. 9).

(Pag. 63.) 4. *S. prominens* [= *Cercidia prominens* (WESTR.) 1851].

Syn.: 1851. *EPEIRA PROMINENS* WESTR., Förteckn. etc., p. 35.

1861. *SINGA SCUTIFERA* ID., Aran. Suec., p. 67.

1861. *EPEIRA BELLA* MEADE, Descr. of a new spec. of spid., in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 20.

1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 343, Pl. XXV, fig. 248.

1865. *ATEA SPINOSA* OHLERT, Arachnol. Studien, p. 9.

1866. *CERCEIS*¹⁾ *PROMINENS* MENGE, Preuss. Spinn., I, p. 80, Pl. 13, tab. 21.

Of this remarkable species I have had the opportunity of examining a ♂ and ♀, which I received from WESTRING, and a ♀ from Finnland sent me by NORDMANN, as also a young specimen communicated by OHLERT. The posterior row of eyes, viewed from above, is almost straight, slightly curved forward; the four central eyes form a rectangle, of which the length is a little greater than the breadth: the posterior central eyes are considerably larger than the anterior, and the interval between the former is in ♀ considerably, in ♂ somewhat less than that between the latter. The distance between these and the posterior central eyes is about equal to that between the anterior lateral and central eyes, equal to the diameter of the posterior central, and evidently greater than the interval between the two anterior central eyes. In the ♂ the anterior central eyes are situated on a projecting protuberance, and the distance between them and the posterior central eyes is evidently less than between the somewhat procurved anterior row of eyes and the border of the clypeus. — On the slightly curved palpal claw of the female I have counted 7 gradually longer, pointed, close-set comb-teeth, on the powerful superior tarsal claw of the 1st pair of legs 9—12 similar teeth; on the small inferior claw the two ordinary teeth are very short and rudimentary.

WESTRING has informed me, that he now considers *S. scutifera* as identical with *S. prominens*, which is doubtless right.

On the genus *Cercidia*, vid. THOR., On Eur. Spid., p. 58.

(Pag. 66.) 5. *S. scutifera* [= *Cercidia prominens* (WESTR.) 1851].

See preceding species.

1) *Cerceis* MILNE-EDW. [Crust.] 1840.

(Pag. 68.) III. *ZILLA* [= *Zilla* (C. KOCH) 1834].

See THOR., On Eur. Spid., p. 59.

(Pag. 69.) 1. *Z. atrica* [= *Zilla atrica* (C. KOCH) 1845].

- Syn.*: 1802. *ARANEA CALOPHYLLA* WALCK., Faune Par., II, p. 200. } (*ad partem*).
 1805. *EPEIRA* „ ID., Tabl. d. Aran., p. 62. }
 1834. *ZYGIA* „ C. KOCH, in HERR-SCHÄFF, Deutschl. Ins., 123,
 17, (*ad part.*: ♂; *sec.* KOCH, Die Arachn.)
 1844. *EUCHARIA ATRICA* ID., Die Arachn., XII, p. 103, Taf. CCCCXIX, figg.
 1030, 1031.
 1851. *EPEIRA* „ WESTR., Förteckn. etc., p. 35.
 1856. *ZILLA* „ THOR., Rec. crit., p. 107.
 1864. *EPEIRA CALOPHYLLA* BLACKW., Spid. of Gr. Brit., II, p. 338, Pl. XXV,
 fig. 245.
 1866. *ZYGIA ATRICA* MENGE, Preuss. Spinn., I, p. 78, Pl. 12, tab. 20.
 1867. „ *CALOPHYLLA* OHL., Aran. d. Prov. Preuss., p. 30.

This spider, confounded by WALCKENAER, SUNDEVALL and others with the next following, has first been described as a separate species by C. KOCH, under the new specific name of *atrica*. The name of *calophylla* he reserved for the next following species, *Z. x-notata*, and it ought not therefore to be applied to *Z. atrica*, especially as WALCKENAER, in his descriptions of *E. calophylla*, does not mention any characteristic (not even the male's elongated palpi), which more indicates *Z. atrica*, than *Z. x-notata*, and it might consequently be questioned whether WALCKENAER were acquainted with *Z. atrica*. — OHLERT has, in his synonyms, confounded the two species, but his description seems to me only to apply to *Z. atrica*. — This species is distinguished from *Z. x-notata* not only by a lighter and brighter colour, but also by the male's uncommonly long palpi. The female's vulva is very short, as in *Z. x-notata*, but of different form and different colour. Vid. inf. sub *Z. montana* WESTR.

(Pag. 71.) 2. *Z. x-notata* [= *Zilla x-notata* (CLERCK) 1757]

- Syn.*: 1757. *ARANEUS LITERA X NOTATUS* CLERCK, Sv. Spindl., p. 46, Pl. 2, tab. 5.
 1757. „ *X NOTATUS* ID., *ibid.*, p. 154.
 1789. *ARANEA LITTERATA* OLIV., Encycl. Méth., IV, p. 206.
 ?1789. „ *FOLIATA* VILL., Linn. Ent., IV, p. 126.
 1802. „ *CALOPHYLLA* WALCK., Faune Par., II, p. 200. } (*ad partem*).
 1805. *EPEIRA* „ ID., Tabl. d. Aran., p. 62. }

- ?1834. ZYGIA CALOPHYLLA C. KOCH, in HERR.-SCHAEFF., Deutschl. Ins., 123
 (ad part.: 18, 19).
 1839. ZILLA ,, ID., Die Arachn., VI, p. 148, Taf. CCXVI, figg.
 538, 539.
 1844. EPEIRA SIMILIS BLACKW., Descr. of some newly disc. spec. of Aran.,
 in Ann. and Mag. of Nat. Hist., XIII, p. 186.
 1858. ZILLA X-NOTATA THOR., Om Clercks Origin.-spindelsaml., in Öfver-
 sight af K. Vet.-Akad. Förhandl., XV, p. 146.
 1864. EPEIRA SIMILIS BLACKW., Spid. of Gr. Brit., II, p. 337, Pl. XXV, fig. 244.

In Rec. crit., p. 25, I assumed, on grounds there stated, that *Ar. x-notatus* CLERCK was the same as *Zilla montana* WESTR., a view which, when I subsequently had an opportunity of examining the collection of spiders, which CLERCK had possessed and brought together, I found to be erroneous. That collection in fact contained two females of *Z. calophylla* (WALCK.) C. KOCH, but neither *Z. atrica* nor *Z. montana* WESTR., nor any other species to which it is possible to refer *Ar. x-notatus*. This affords a so much better proof, that it is *Z. calophylla* C. KOCH, that CLERCK has described under the name of *Ar. x-notatus*, in as much as that he expressly says p. 46, that he had met with *several females* ("åtskilliga honor") of that species, and the description contains nothing whatever, that does not apply to *Z. calophylla* (vid. THOR., loc. cit.). I have accordingly assigned to that species the Clerckian name of *x-notata*, and have in this been followed by WESTRING.

The word "*litera*" in *Ar. litera x notatus*, *Ar. litera v notatus* etc. should not be considered as a part of the "*nomen triviale*" of the animal: it is not found in the index of CLERCK's work, as is seen from our Synon. — MENGE'S *Z. calophylla* (Preuss. Spinn., p. 76) does not belong to this, but to the following species, *Z. montana* WESTR. (*Z. Stræmii* N.), which is evident, as well from its alleged smaller size, as from the description and figures of its organs of copulation. *Z. x-notata* (CLERCK) is as large as *Z. atrica*, and its vulva is very short and low, as in that species, not drawn out in the form of a stileto, as in *Z. montana* WESTR. The male's clava also has not the strong, curved spur observable in *Z. montana* WESTR. — Concerning that species and *Z. montana* C. KOCH vid. infra.

It is remarkable that BLACKWALL should not have observed that his *E. similis* is the same as KOCH'S *Z. calophylla*. — Mr. CAMBRIDGE has kindly supplied me with English specimens of *E. similis* BLACKW.

Epeira annulipes LUCAS (WEBB and BERTHELOT, H. N. d. Iles Canaries, Entom., p. 14, Pl. 6, fig. 2) is considered by LUCAS himself in Explor. de l'Algérie, Arachn., p. 146, as a synonym for *Ep. calophylla* WALCK. It is however very uncertain that LUCAS' spider from the Canaries is identical with this last, not only because the figure of *E. annulipes* shows very little similitude to *E. calophylla* WALCK., or our *Z. x-notata*, but also because in the south of Europe there are several species that are closely related to, and may be easily confounded with it. Two such species, never previously described, *Z. Kochii* and *Z. Rossii*'), I have met with at Nizza, where I also captured an uncommonly small specimen of *Z. x-notata*.

1) *Zilla Kochii* N. Cephalothorax testaceus, summo margine nigro, *parte cephalica non vel parum infuscata, lineis tribus postice coeuntibus nigricantibus notata, sterno fusco, vitta media flaveni*; mandibulae nigro-fuscae, pedes distincte nigro-annulati-maculatique, praesertim subtus; abdomen cinereo-testaceum, area dorsuali magna, ovata, in lateribus undulata, postice truncata vel sub-emarginata, *non usque ad anum pertinenti*, extus nigra vel fusca, intus clariore, sub-cinerea: haec area ad longitudinem dividitur vitta media albicanti posteriora versus angustata, in lateribus sinuata vel ex maculis paucis x-formibus, plus minus confluentibus composita, et linea fusca geminata, quae linea usque ad anum percurrit, ibique alia linea brevi transversa decussata est: latera abdominis maculis et vitta ad longitudinem ducta fuscis plus minus distinctis notantur; venter pone vulvam maculam magnam fuscam fere semi-ovatam, arcubus duobus flaventibus inclusam exhibet; *vulva ad maximam partem fusco-testacea, in procursum brevior, latum, extus (posteriora versus) sub-dilatatum, apice breviter acuminatum, c:a 1/2 millim. longum* (vel dimidium tarsum pedum anteriorum longitudine non superantem) *producta*. — ♀ ad., long. 7—8 millim. Long. cephalothor. 3—3 1/2, abdominis 4—5, pedum 1^{mi} paris 11—12, 3^{ti} paris 6—6 1/2 millim.

Magnitudine *Z. x-notatae*, a qua parte cephalica non tota valde infuscata, pictura abdominis paullo alia, praesertim vero vulva in scapum producta differt; a *Z. Stracmii* N. (*Z. montana* WESTR.), cui colore abdominis magis similis est, hoc scapo multo brevior, ut et magnitudine majore cet., sine negotio internoscitur. — ♂ ignotus.

Ad Nicæam (Nizza) et Herculis Monæci Portum (Monaco) hæc species, quam in honorem Clariss. L. KOCHII nominavi, sat frequens inventa est.

Zilla Rossii N. Cephalothorax fusco-testaceus, radiis plus minus distinctis versus latera summoque margine fuscioribus, *parte cephalica concolore, non nigro-lineata, sterno toto fusco vel nigro*; mandibulae et pedes fusco-testacei, hi distincte nigro-annulati, *aculeis carentes*; abdomen cineraceum, punctis crebris albicantibus reticulatum, area dorsuali magna sub-ovata, in lateribus undulata, postice truncato-emarginata, non usque ad anum pertinenti, maculis nigris limitata aut confluentibus aut omnino liberis, extus plerumque albicanti-limbatis, quarum duæ anteriores reliquis majores sunt: intus hæc area cinerea vel fusca est, antice macula alba oblonga A- vel x-formi et versus medium punctis duobus albidis

With regard to the differences in the structure of the organs of copulation between this and other nearly related European species of the genus *Zilla*, see the next following species, *Z. montana* WESTR., and the short descriptions of *Z. Kochii* and *Z. Rossii* given in the preceding foot-note.

(Pag. 73.) 3. *Z. montana* [= *Zilla Stræmii* THOR. 1870].

- Syn.: 1833. EPEIRA CALOPHYLLA Var. *b* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 253.
 1851. „ MONTANA WESTR., Förteckn. etc., p. 35.
 1856. ZILLA X-NOTATA THOR., Rec. crit., p. 26.
 1858. „ MONTANA ID., Om Clercks Origin.-spindelsaml., p. 148.
 1867. „ CALOPHYLLA MENGE. Preuss. Spinn., I, p. 76, Pl. 12, tab. 19.
 1870. „ STRÆMII THOR., On Eur. Spid., p. 235.

On *Araneus x-notatus* CLERCK and *Zilla calophylla* MENGE we have treated in the preceding article. The species that WESTRING describes under the name of *Zilla montana*, and of which I have above given the synonyms, is by no means the same as C. KOCH's *Z. montana* (HERR.-SCHÆFF., Deutschl. Ins., 125, 19; Die Arachn., VI, p. 146, Pl. CCXV, figg. 536, 537). In colour, and often in size, there is indeed a considerable likeness, but WESTRING's spider is easily distinguished by the form of the organs of copulation, which have an appearance quite different from that of the real *Z. montana*. In this latter species the vulva is *very short*, not, as in WESTRING's species, drawn out into a long, backward turned stilus, and is accordingly more like the vulva of *Z. x-notata* and *Z. atrica*. WESTRING's *Z. montana* I have called *Z. Stræmii* (in memory of the distinguished Norwegian naturalist H. STROM). The real *Z. montana* differs from *Z. atrica*, *Z. x-notata* and *Z. Stræmii* in having the sternum of a *uniform dark-*

notata, sæpissime linea quoque vel vitta angusta nigra a macula illa ad medium saltem dorsi ducta; latera abdominis versus basin vitta abbreviata nigra plus minus distincta et interdum postice maculis nigris notantur; venter niger, vittis duabus albicantibus, linea vel vitta angustiore media nigra separatis, interdum totus subcinereus; vulva ex *callo minuto transverso nigro* tantum constat. — ♀ ad., long. c:a 5 mill. Long. cephalothor. c:a 2, abdominis c:a 4, pedum 1^{mi} paris 5½—7, pedum 3^{ti} paris 4—4½ millim.

Pedibus non aculeatis, forma vulvæ, colore, magnitudine minori et brevitate pedum anteriorum a reliquis hujus generis facillime dignoscenda. — ♂ ignotus.

Ad Nizza et Monaco non raro inventa. Nomine Cel. P. ROSSI hanc speciem ornatam volui.

brown colour, without a longitudinal lighter middle stripe; the belly is in the middle pure black with a bright yellow band or spot on both sides. (Conf. Koch's description, die Arachn., V, p. 147!). The vulva is of a sufficiently characteristic form to prevent all confusion even with *Z. atrica* and *Z. x-notata*, whereon more presently. — Of *Z. montana* C. Koch I have captured some female specimens and an immature male in Switzerland, partly in Berner Oberland and partly at St Moritz in Ober-Engaddin. It has been found by C. Koch also only in Alpine tracts¹). Dr L. Koch has kindly sent me an adult ♂ and ♀ from Gallice under the name of *Z. alpina* L. Koch²), which are somewhat larger than my Swiss specimens. *Z. Stræmii* again is common in many parts of Sweden, and is also met with in Finnland and Prussia.

In *Z. x-notata* the vulva forms a low, transversal, truncated, black or dark-brown elevation or ridge slightly depressed in the middle, which, on the surface turned backwards and towards the belly, shows two small rounded foveæ. In *Z. atrica* it also exhibits a similar transversal black ridge, but which behind encloses a smaller, also transversal, callus of a yellow colour, and divided by a longitudinal impression into two small rounded bumps. This renders it easy to distinguish even by the colour of the vulva between *Z. x-notata* and *Z. atrica*: in the former the entire vulva is blackish, in the latter yellow in the middle, behind.

In *Z. montana* C. Koch the vulva forms a thick, black, transversal protuberance, which, seen from the side, has almost the form of a low, truncated cone, the place of the abscinded apex being occupied by a large, rounded fovea open behind and continued backward (and upward) with two short longitudinal impressions, which however are not always visible.

In *Z. Stræmii* the vulva runs out into a long (about $\frac{3}{4}$ mm., or as long as the tarsus of the 1st pair), slender, horny, black process pointing backwards; it is slightly curved upward (towards the belly), tapering towards the blunt extremity, flattened beneath, and there provided with a longitudinal furrow. The male's palpus has at the base of the clava, on the exterior side, a strong, curved spur or hook,

1) When BÖCKH (Vorläufige Uebersicht d. während d. Reise d. Fregatte Novara gesammelten Spinnen, in Verhandlungen d. zool.-botan. Gesellsch. in Wien, XI (1861), p. 390) mentions "*Zilla montana* Koch" from Madeira, Rio Janeiro and Shanghai, he no doubt confounds this with other related species.

2) GIEBEL has already in 1867 (Zur Schweitzer. Spinnenfauna, p. 434) given the name *Zilla alpina* to another spider.

compressed and obliquely cut off at the extremity, as also a fine, sharply curved, pointed hook at the very apex of the clava. *Z. montana* ♂ (as also *Z. x-notata* ♂) is destitute of the first-named strong hook, but has instead of it *two large strong teeth* on the underside, outwards, nearer the base. In *Z. x-notata* ♂ also these teeth are wanting. In the male of this last named species the diameter of the palpal clava is *not* greater, rather somewhat *less*, than the diameter of the thighs of the 1st pair; in *Z. Stræmii* the diameter of the clava is *somewhat*, in *Z. montana* *much* greater than the diameter of the anterior thighs.

On the form of the vulva in *Z. Kochii* and *Z. Rossii*, see pag. 33, 34, note.

(Pag. 75.) IV. META [= *Meta* (C. Koch) 1836].

Vid. THOR., On Eur. Spid., p. 61.

(Pag. 76.) 1. *M. fusca* [= *Meta Merianæ* (Scop.) 1763].

Var. α (forma principalis):

- Syn.*: 1763. ARANEA MERIANÆ SCOP., Ent. Carn., p. 395.
 1778. „ FUSCA DE GEER, Mém., VII, p. 235, Pl. 11, figg. 9—12.
 1802. „ ANTRIADA WALCK., Faune Par., II, p. 201.
 1805. EPEIRA „ ID., Tabl. d. Aran., p. 62.
 1833. „ INCLINATA Var β SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 250.
 1836. META MERIANÆ C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 134, 14, 15.
 1851. EPEIRA FUSCA WESTR., Förteckn. etc., p. 34.
 1856. META „ THOR., Rec. crit., p. 98.
 1864. EPEIRA ANTRIADA BLACKW., Spid. of Gr. Brit., II, p. 351, Pl. XXVI, fig. 253.

Var. β , *celata*:

1844. EPEIRA CELATA BLACKW., The differ. in the numb. of eyes etc., in Transact. of the Linn. Soc. XVIII, Part. IV, p. 668.
 1864. „ „ ID., Spid. of Gr. Brit., II, p. 353, Pl. XXVI, fig. 254.

It is indeed far from certain, that SCOPOLI's *Ar. Merianæ* is really the species described by C. KOCH under the name of *Meta Merianæ* (Scop.), and which in WESTRING is called *M. fusca*; but as no better conjecture has been made or probably can be made on the subject, and as SCOPOLI's specific name is almost universally adopted by the German arachnologists, I conceive I ought to accept it for the species before us, instead of the more certain but newer name *fusca* DE GEER. That this last-mentioned name is used by

most authors for the next species, *M. Menardi* — a custom which, though decidedly wrong, is too deeply rooted to be easily amended — is also a reason for not hypercritically rejecting the name *Merianæ*. — Conf. next following species, *M. Menardi* WESTR.

WALCKENAE'S *Ep. antriada* may, it seems to me, with perfect certainty be registered as a synonym for *M. Merianæ*. "Cette espèce," says he (Ins. Apt., II, p. 83), "ressemble beaucoup à l'Inclinée (*Meta segmentata* (CLERCK)) par sa forme et par la figure qui est sur le dos de l'abdomen; mais elle est *plus forte*, et a . . . *des points noir sur les cuisses*. — Elle fait une toile inclinée à l'entrée des soupiraux, des caves, et des lieux obscurs. Cette aranéide fait aussi souvent une toile verticale parallèle aux murs dans l'intérieur des caves." All this exactly suits *M. Merianæ*, but, as regards size and haunts, does not suit *Meta muraria* C. KOCH (Die Arachn., VIII, p. 125, Taf. CCLXXXVIII, figg. 693, 694), which BLACKWALL considers to be the same as *E. ontriada*, but which has neither by KOCH nor MENGE been found in cellars, but on old walls, and which is stated to be of about the same size as *M. segmentata*.

As regards BLACKWALL'S *Ep. antriada* and *Ep. celata*, I cannot believe, that they really are, as he states, separate species. With respect to their form, the descriptions indicate no other difference than that *E. celata* is something smaller than *E. antriada*: as to the colour, the only essential difference seems to be, that *E. celata* has a longitudinal yellow stripe on the back of the abdomen, which is absent in *E. antriada*. The individuals most frequently met with of *Meta Merianæ* are precisely like BLACKWALL'S figures of *E. antriada*; but both WESTRING and KOCH (Die Arachn., VIII, p. 122) describe a *variety* with a *yellow longitudinal stripe* on the abdomen. I have myself a specimen of this in our parts somewhat rare variety, and cannot discover in it any other deviation whatever from *Meta Merianæ*. Even the figures given by BLACKWALL of the males' palpi in *E. antriada* and *E. celata* are so like, that it seems impossible that they can be referred to two different species. They fully agree with the palpi of *M. Merianæ* ♂, in which the clava is just such as it is represented for *E. celata*. In the figure representing the palpus of *E. antriada* ♂, the lamina bulbi is at the apex drawn out at an angle, whereas in *E. celata* (as also in *M. Merianæ*) it is rounded off uniformly; but this is certainly but an inaccuracy of drawing, for the descriptions do not indicate either that or any other difference in the form of the palpi. — CAMBRIDGE, who sent me from England

specimens of both sexes of *E. antriada* BLACKW. or *Meta Merianæ* KOCH, writes also to me: "*E. celata* is certainly only a variety of *E. antriada*: it differs only in the marking of the upper part of the abdomen: no structural difference in the palpi of ♂."

In *Meta muraria*, according to MENGE's figures (loc. cit.), the large, hooked process at the base of the palpus-clava reaches forward up to the apex of the clava; in *M. Merianæ* it does not reach half so far, and stands more boldly out from the clava. In *M. Merianæ* all the metatarsi have 6 (rarely but 5) spines; in *M. muraria* these spines are, according to MENGE, 4 on the anterior and 5 on the posterior metatarsi. — Among the synonyms of his *E. antriada*, WALCKENAEER erroneously classes *Z. montana* KOCH, whereof see preceding article, *Z. montana* WESTR.

(Pag. 78.) 2. **M. Menardi** [= *Meta Menardi* (LATR.) 1804].

- Syn.*: 1804. ARANEA MENARDI LATR., H. N. d. Crust. et d. Ins., VII, p. 266.
 ?1804. „ NOVEN-MACULATA PANZ., Syst. Nom., p. 244. (SCHÆFF., Ic. Ins. Ratisb., II, Tab. CLVIII, fig. 6.)
 1805. EPEIRA FUSCA WALCK., Tabl. d. Aran., p. 63.
 1806. „ MENARDI LATR., Gen. Crust. et Ins., I, p. 108.
 1836. META FUSCA C. KOCH, in HERR-SCHÆFF., Deutschl. Ins., 134, 12, 13.
 1856. „ MENARDI THOR., Rec. crit., p. 98.
 1864. EPEIRA FUSCA BLACKW., Spid. of Gr. Brit., II, p. 349, Pl. XXVI, fig. 252.

This species has by foreign arachnologists been generally considered as identical with *Aranea fusca* DE GEER, and accordingly goes usually under the name of *Epeira* or *Meta fusca*. Both SUNDEVALL and WESTRING have however long since referred *Aranea fusca* to the spider described by C. KOCH as *Meta Merianæ* (SCOP.), and that this view is correct, I already in 1856 (loc. cit.) endeavoured to prove. Such expressions in DE GEER's description, as e. g. that the abdomen is "parsemé d'un grand nombre de taches et de nuances noirs velues," will evidently not suit *Epeira Menardi* LATR., but apply very well to *M. Merianæ* (*Ep. antriada* WALCK.). For further information on this head we refer to Rec. crit., p. 98. — BÖCKH's 1) conjecture, that *Meta muraria* C. KOCH is synonymous with this species, is of course wrong.

1) V. FRAUENFELD and BÖCKH, Ueber unterirdisch lebenden Fische u. Spinnen (Verhandl. d. zool.-bot. Gesellsch. in Wien, XII (1862)), p. 35.

(Pag. 80.) 3. **M. segmentata** [= *Meta segmentata* (CLERCK) 1757].

Var. α (forma principalis):

- Syn.*: 1757. ARANEUS SEGMENTATUS CLERCK, Sv. Spindl., p. 45, Pl. 2, tab. 6.
 1758. ARANEA RETICULATA LINN., Syst. Nat., Ed. 10, I, p. 619.
 ? 1781. „ ANGULATA SCHRANK, Enum. Ins. Austriæ, p. 527.
 1787. „ SENOCULATA CYRILL., Ent. Neap. Spec. I, Tav. VIII, fig. 7,
 (sec. CANESTRINI).
 1802. „ INCLINATA WALCK., Faune Par., II, p. 201.
 1805. EPEIRA „ ID., Tabl. d. Aran., p. 62.
 1826. „ VARIEGATA RISSO, H. N. d. princ. prod. d. l'Eur. mérid.,
 V, p. 170.
 1839. ZILLA RETICULATA C. KOCH, Die Arachn., VI, p. 142, Taf. CCXIV,
 figg. 532, 533.
 1851. EPEIRA SEGMENTATA WESTR., Förteckn. etc., p. 35.
 1856. META „ THOR., Rec. crit., p. 25.
 1864. EPEIRA INCLINATA BLACKW., Spid. of Gr. Brit., II, p. 354, Pl. XXVI,
 fig. 255.
 1867. META SEGMENTATA MENGE, Preuss. Spinn., I, p. 86, Pl. 14, tab. 24.

Var. β , Mengei:

1861. META ALBIMACULA WESTR., Aran. Suec., p. 82.
1870. EPEIRA MENGEI BLACKW., Descr. of a new spec. of Epeira, in Ann.
and Mag. of Nat. Hist., 4 Ser., IV (Dec. 1869).

WESTRING'S *M. albimacula*, or *Epeira Mengei* BLACKW., is by no means the same as *Zilla albimacula* C. KOCH (= *Epeira diodia* WALCK., to which we shall hereafter return, when we come to treat of *Epeira albimacula* BLACKW.). It appears to me to be merely a *smaller race* of *M. segmentata*¹⁾, coming to maturity already in the *beginning of the summer*, and thus much earlier than the "forma principalis" (Conf. WESTRING and BLACKW., locis cit.). The female, according to WESTRING himself, can only be distinguished by its smaller size: the male is said to be distinguished by the presence of perpendicular hairs under the anterior metatarsi, which are absent in *M. segmentata* ♂, the legs of which are "toti colore rubicundo tincti," whereas in *M. albimacula* WESTR. their colour is "sordide pallescens." But these differences appear to me not to be constant: in many male specimens of *M. segmentata* the legs do not appear to me at all to

1) This is now the opinion of WESTRING himself, as he has by letter informed me.

approximate to red, and I have a male that, by its size and the colour of its legs, undoubtedly belongs to *M. albigmacula*, but under whose metatarsi there are no perpendicular hairs. The presence or absence of these hairs appears to have as little significance in *M. segmentata* as in *Tetragnatha extensa* (vid. inf.). Even MENGE (loc. cit., p. 88), though he believes himself to have seen in the organs of copulation of the males differences between the two forms in question — which differences I have not been able to verify on my Swedish specimens, among which are two of "*M. albigmacula*" sent me by WESTRING himself — looks upon the latter as a mere variety of the former. We designate it as *Var. β, Mengei*.

Araneus x-notatus, which C. KOCH (Die Arachn., VI, p. 142) makes a synonym to *Zilla reticulata*, does not belong to this species, but to his *Zilla calophylla*. Vid. supr. sub *Z. x-notata* WESTR.

(Pag. 82.) 4. *M. albigmacula* [= *Meta segmentata* (CLERCK) 1757:
Var. β, Mengei].

Vid. preceding species, *M. segmentata* WESTR.

(Pag. 83.) V. TETRAGNATHA [= *Tetragnatha* LATR. 1804].

Vid. THOR., On Eur. Spid., p. 62.

(Pag. 84.) 1. *T. extensa* [= *Tetragnatha extensa* (LINN.) 1758].

Syn.: 1758. ARANEA EXTENSA LINN., Syst. Nat., Ed. 10, I, p. 621.

1763. „ SOLANDRI SCOP., Ent. Carn., p. 397.

1763. „ MOUFFETI ID.. ibid., p. 398.

1805. TETRAGNATHA EXTENSA WALCK., Tabl. d. Aran., p. 68.

?1826. „ RUBRA RISSO, H. N. d. princ. prod. de l'Eur. mér., V,
p. 168.

1837. „ OBTUSA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 5.

1837. „ GIBBA ID., ibid.

1861. „ OBTUSA WESTR., Aran. Suec., p. 86.

1864. „ EXTENSA BLACKW., Spid. of Gr. Brit., II, p. 337, Pl.
XXVIII, fig. 265.

1866. „ „ MENGE, Preuss. Spinn., I, p. 90, Pl. 15, tab. 26.

1866. „ OBTUSA ID., ibid., p. 93, Pl. 15, tab. 27.

This not only in size and colour, but also in form very variable species is divided by WESTRING and MENGE into two, *T. extensa* and

T. obtusa, of which the latter, together with a third species called *T. gibba*, was first described as a separate species by C. KOCH, 1837. In his later works however KOCH never mentions *T. obtusa* and *T. gibba*, which looks as if he had abandoned the opinion that they are independent species. By WESTRING *T. extensa* and *T. obtusa* are distinguished by their different colour, by a difference in the length of the spines on the legs, especially on the anterior tibiæ (which spines in *T. extensa* are said to be shorter than, and in *T. obtusa* of the same length as, the patella), as also by the different hairy covering of the legs. To these MENGE adds sundry other distinguishing marks, of which one is especially stated to be of easy verification, namely the different form of the strong spine situated at the apex of the male's mandibles, a little above the insertion of the claw. This spine in *T. extensa* is said to be *truncated* (when looked at in another direction, regularly pointed), and in *T. obtusa* to be *cloven*. A large number of specimens may by these criteria be determined as belonging to *T. extensa* or *T. obtusa*; but this is by no means the case with all. I have female specimens, which, on account of the dark colour of the body, the uniformly dark-brown sternum, the very dark-ringed legs, as also the short, in front more tumid abdomen, I should be inclined to refer "to *T. obtusa*," but which the spines and hair of the legs show unconditionally to belong to "*T. extensa*." In most of the males the above mentioned mandibular spine is double-pointed, but the spines on the legs considerably shorter than the patella; in others again the extremity of the mandibular spine is so slightly notched, that it is impossible to say to which of these two so-called species the specimen is, in virtue of the form of this spine, to be aggregated. SUNDEVALL ¹⁾, L. KOCH ²⁾ and KEYSERLING ³⁾, who have described this spine in *T. extensa* (under which name these authors also include *T. obtusa*), do not mention any other form of it than the double-pointed, which accordingly must be considered as the normal form for the species, and by no means exclusively belonging to *T. obtusa*. Neither have I been better able by means of the other criteria given by MENGE to distinguish with certainty this species from *T. extensa*. The difference in the

1) Svenska Spindl. Beskr., in Vet.-Akad. Handl. för 1832, p. 257.

2) Zur Arachniden-gattung Tetragnatha, in Korrespondenz-Blatt d. zool.-miner. Vereins in Regensburg, 16 Jahrgang (1862), p. 79.

3) Beiträge zur Kenntniss d. Orbitelæ, in Verhandl. d. zool.-bot. Gesellsch. in Wien, XV (1865), p. 47.

hairy covering, which WESTRING believes himself to have found between them (for inst. the presence of vertical hairs on the metatarsi of *T. extensa* and their absence in *T. obtusa*) may, as is rightly remarked by MENGE, be found between different individuals of either form. Moreover in the relative length of the spines on the legs a transition from the one form to the other is often visible. On these grounds I cannot consider *T. obtusa* as a species different from *T. extensa*: if two or more species be confounded under this latter name, they must be distinguished by quite other characters than those mentioned by WESTRING and MENGE.

The form of the abdomen varies greatly, especially with age. I have a young female specimen (about $4\frac{1}{2}$ mm. long), where it is very high and arched, and the length to the breadth in about the proportion of 7 to 5. In young specimens also the cephalothorax, the extremities and the parts of the mouth, especially the mandibles, are somewhat shorter than in fullgrown individuals, but the spines on the legs are proportionately longer. In fullgrown ♀-individuals the legs are sometimes 7 times, sometimes only 6 times, but in the male usually about 8 times as long as the cephalothorax. The metatarsus (1st pair) I found in a ♀ to be 5 times, but in a ♂ only 4 times as long as the tarsus. All this applies to specimens of *T. extensa* WESTR.

The distance between the lateral eyes is always something less than between the anterior and posterior central eyes, and the two rows of eyes are accordingly somewhat, though slightly, *convergent* at their extremities. By this criterion the species is immediately distinguished from *T. striata* L. KOCH¹⁾, in which the side-eyes are more widely separated, so that the two rows *diverge* at their extremities. Of that species, which has considerably shorter legs (in ♀ only 5 times the length of the cephalothorax) and a totally different form of the mandibles from that of *T. extensa*, Dr. HAGLUND has found two young specimens in Östergötland. These specimens have still coarser extremities than a fullgrown female of *T. striata*, with which Dr. L. KOCH kindly presented me: the metatarsus of the larger specimen (a young ♂) is but little more than twice the length of the tarsus (in the adult ♀ it is nearly 3 times as long as the tarsus). This species had been previously found (by L. KOCH) only at the lake of Würm or Starenberg in Bavaria.

1) Zur Arachniden-gattung Tetragnatha, loc. cit.

As a third European species WALCKENAER¹⁾ describes *T. gibbosa*, a form unknown to me. He looks upon it as identical with *T. gibba* C. KOCH (which however is probably nothing more than a variety of *T. extensa*), and even forms for it a separate "famille" of the genus, "les Trigones (*Trigonæ*)," which is said to be distinguished from the others by having the mandibles "peu proéminentes, peu allongées, cylindriques," and the "abdomen très-renflé à la partie antérieure, peu allongé." These distinctive marks do not prove that *T. gibbosa* is not a young *T. extensa*, but WALCKENAER speaks of full-grown specimens, which makes the identity of these species very problematical. He says he once found a female *T. gibbosa* "dans une petite cavité" beneath a stone and enclosed in a white cocoon which she had spun, and he supposes himself thereby to have demonstrated a radical difference of economy between it and *T. extensa*. The description is very short and imperfect.

The fourth European species, *T. epeirides* WALCK. (Hist. Nat. d. Ins. Apt., II, p. 223), is also unknown to me.

(Pag. 87.) VI. MITHRAS [= *Hyptiotes* WALCK. 1837].

Vid. THOR., On Eur. Spid., p. 67.

(Pag. 88.) 1. *M. paradoxus* [= *Hyptiotes paradoxus* (C. KOCH) 1834].

Syn.: 1834. MITHRAS²⁾ PARADOXUS C. KOCH, in HERR-SCHLÉFF., Deutschl. Ins., 123, 9.

1837. SCYTODES MITHRAS WALCK., H. N. d. Ins. Apt., I, p. 275; Atlas, Pl. 22, figg. F 2 D, 2 B.

1837. HYPTIOTES [UPTIOTES] ANCEPS ID., ibid., p. 277; Atlas, Pl. 7, figg. F 1 D, 1 d, 1 A, 1 B.

1837. " " ANCEPS SCHREBERI ID., ibid., p. 278; Atlas, Pl. 7, figg. F 2 D, 2 d, 2 c, 2 k.

1845. MITHRAS UNDULATUS C. KOCH, Die Arachn., XII, p. 96, Taf. CCCXVIII, fig. 1025.

1869. HYPTIOTES PARADOXUS THOR., On Eur. Spid., p. 67.

Mithras undulatus C. KOCH is certainly only a variety of *M.* or *Hyptiotes paradoxus*. On the synonyms etc. of this species see also THOR., Till känded. om släktena Mithras och Uloborus, in Öfversigt

1) Sur une nouv. fam. du genre Tetragnatha, in Ann. de la Soc. Ent. de France, 2 Ser., V, Bull., p. XLI.

2) *Mithras* HÜBN. [Lepidopt.] 1816. — *Mythras* HALID. [Hymenopt.] 1829.

af Vet.-Akad. Förhandl., XV (1858), p. 199 et seq. — Besides the European *H. paradoxus*, only one more species of this highly interesting genus is with certainty known, viz. *H. flavidus* (BLACKW.) from Madeira ¹). Of his *H. (Mithras) dubius*, also from Madeira, BLACKWALL himself says, that it "possibly may be the female of *Mithras flavidus*" ²). — The spider, which GIEBEL ³) has described under the name of *Uptiotes longipes* (from Egypt), does not belong to this genus, but probably to *Loxosceles* HEIN. et LOWE (*Omosites* WALCK.).

(Pag. 90.) FAM. II. THERIDIIDÆ [= **Retitulariæ** N.].

(Pag. 90.) I. LINYPHIA [= ***Linyphia*** (LATR.) 1804].

Vid. THOR., On Eur. Spid., p. 81.

(Pag. 92.) 1. **L. montana** [= ***Linyphia montana*** (CLERCK) 1757].

Syn.: 1757. ARANEUS MONTANUS CLERCK, Sv. Spindl., p. 64, Pl. 3, tab. 1.

1778. ARANEA RESUPINA DOMESTICA DE GEER, Mém., VII, p. 251, Pl. 14, fig. 23.

1789. „ RESUPINATA OLIV., Encycl. Méth., p. 213.

1830. LINYPHIA MONTANA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 217.

1833. „ MARGINATA BLACKW., Charact. of some undescr. gen. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 346.

1834. „ RESUPINA REUSS, Zool. Misc., Arachn., in Mus. Senckenb., I, p. 246 (252), Pl. XVII, fig. 4.

1864. „ MARGINATA BLACKW., Spid. of Gr. Brit., II, p. 213, Pl. XV, fig. 140.

1866. „ MONTANA MENGE, Preuss. Spinn., I, p. 104, Pl. 18, tab. 33.

In *Rec. crit. aran.*, p. 31 et seq., I have set forth in detail the synonyms of this species, as also those of *L. triangularis* (CLERCK), and have corrected the errors, which, especially through WALCKENAER (Ins. Apt., II, p. 242), had crept in. I have there shown that *Ar. montanus* CLERCK (not *Ar. montana* LINN.!) is the same species as DE GEER'S *Ar. resupina domestica*, as is clearly shown by the whole description,

1) Descript. of newly disc. spid. from the isl. of Madeira, in Ann. and Mag. of Nat. Hist., 3 Ser., IX, p. 373. 2) Ibid., p. 376.

3) Drei u. zwanzig neue etc. Spinnen d. Hallischen Sammlung, in Zeitschr. f. d. gesamt. Naturwissensch., XXI (1863), p. 315.

where, for example, we read that the "breast" (cephalothorax) is "subnigrum," "mörkbrunt" (*dark brown*), and the legs provided with "fibulis obscuris," "mattbältige," i. e. with *dark rings*. *Ar. montana* CLERCK is then, in spite of WALCKENAER's assertion, not = *Ar. resupina silvestris* DE GEER, which species by CLERCK is called *Araneus triangularis*. *Ar. montana* LINN., on the contrary, is undoubtedly the same as *Ar. res. silvestris* DE GEER; but, as CLERCK's designation has the priority of LINNÉ's, it is *Ar. res. domestica*, or the *Lín. resupina* of REUSS, WALCK., C. KOCH etc. (*L. marginata* BLACKW.), which must receive the name of *Linyphia montana*, as already SUNDEVALL, and subsequently WESTRING and others, have called it.

WALCKENAER erroneously takes up among the synonyms of this species *Ar. pinnata* MÜLL. (Zool. Danicæ Prodr., p. 194). In treating of that species, MÜLLER, in his short and insufficient diagnosis, refers to STRØM's description of *Ar. pinnata*, which is fully detailed and shows that *Ar. pinnata* is the same as *Lín. triangularis* (CLERCK) WESTR. (See Syn. of this species on the next page). The words cited by WALCKENAER (Ins. Apt., II, p. 246) from "Acta Nidarosicæ" (Det Trondhiemske Selskabs Skrifter), are not of MÜLLER, but of STRØM.

(Pag. 94.) 2. **L. clathrata** [= *Linyphia clathrata* SUND. 1830].

Syn.: 1830. LINYPHIA CLATHRATA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 218.

1833. NERIE NE MARGINATA BLACKW.. Charact. of some undescr. gen. etc., p. 188.

1834. LINYPHIA MULTIGUTTATA REUSS, Zool. Misc., Arachn., p. 248 (254), Pl. XVII, fig. 6.

1837. „ LUCTUOSA C. KOCH, Uebers. d. Arachn.-Syst., I, p. 10.

1864. NERIE NE MARGINATA BLACKW., Spid. of Gr. Brit., II, p. 249, Pl. XVII, fig. 167.

1866. LINYPHIA CLATHRATA MENGE, Preuss. Spinn., I, p. 107, Pl. 18, tab. 34.

This species, which resembles the preceding, but is easily distinguished by its much smaller size, its shorter maxillæ, and the different relative length of the legs (4th pair longer than 1st), appears to be the type of the genus *Neriene* of BLACKWALL. It has escaped that author's observation, that the species had already been described by SUNDEVALL under the name of *Lín. clathrata*, before it received from BLACKWALL the specific name *marginata*. Mr. CAMBRIDGE has kindly sent me English specimens of BLACKWALL's *Neriene marginata*. —

This species is by no means identical with *Lin. pratensis* REUSS, as GRUBE (Verzeichn. d. Arachn. Liv-, Kur- u. Ehstl. ¹⁾, p. 27) supposes.

(Pag. 96.) 3. **L. triangularis** [= *Linyphia triangularis* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS TRIANGULARIS CLERCK, Sv. Spindl., p. 71, Pl. 3, tab. 2, fig. 1 (*Descriptio et figura maris*).
 1758. ARANEA MONTANA LINN., Syst. Nat., Ed. 10, I, p. 621.
 1768. „ PINNATA STRÖM, Beskrivelser over Norske Insekter, 2 St., in Det Trondhiemske Selskabs Skrifter, IV, p. 363.
 1778. „ RESUPINA SILVESTRI DE GEER, Mém., VII, p. 245, Pl. 14, figg. 13—21.
 1789. „ TRIANGULARIS OLIV., Encycl. Méth., IV, p. 211.
 1798. ARANEUS TRIANGULARIUS MARTYN, Aranei, p. 32.
 1805. LINYPHIA MONTANA WALCK., Tabl. d. Aran., p. 71.
 1806. „ TRIANGULARIS LATR., Gen. Crust. et Ins., I, p. 100.
 1864. „ MONTANA BLACKW., Spid. of Gr. Brit., II, p. 211, Pl. XV, fig. 138.
 1866. „ MACROGNATHA MENGE, Preuss. Spinn., I, p. 101, Pl. 17, tab. 31.
 ?1866. „ MICROGNATHA ID., ibid., p. 103, Pl. 17, tab. 32.

The description CLERCK has given of his *Ar. triangularis*, exactly suits *Ar. res. silvestris* DE GEER; if, in the composition of that description he had had *Lin. marginata* C. KOCH before his eyes, he would hardly have omitted to mention the peculiar colour of its cephalothorax. Moreover the figure he gives of the male palpably represents *Ar. res. silvestris*, but the figure of the female on the other hand represents *Lin. marginata* KOCH. CLERCK has accordingly confounded these two spiders; but the first-named being in Sweden by far the more common species, one ought to reserve the specific name *triangularis* to it, as indeed the Swedish (among other) arachnologists, from the time of SUNDEVALL inclusively, have always done. LINNÉ'S *Ar. montana* belongs indeed to this species, but CLERCK'S name, as being elder, has right of priority. For information respecting WALCKENAE'S confusion of the synonyms of this species and of *Lin. montana* (CLERCK), I refer the reader to Rec. crit. aran., p. 31 et seq. See also above, pp. 44, 45, under the head of *Lin. montana* WESTR.

Of the two very nearly related forms, which MENGE (l. c., p. 101—103) describes under the names of *L. macrognatha* and *L. micro-*

1) Verzeichniss d. Arachnoiden Liv-, Kur- u. Ehstlands, in Archiv f. d. Naturkunde Liv-, Ehst- u. Kurlands, 2 Ser., I (p. 441).

gnatha, and which he supposes to have been confounded together under the designation of *L. triangularis*, it appears to me that *L. macrognatha* is identical with the real *L. triangularis* (CLERCK), whereas *L. micrognatha* has never, as far as I am aware, been found in Sweden. MENGE's descriptions indeed, both of the to me unknown *L. micrognatha* and of *L. macrognatha*, are so far deficient that in describing the mandibles, on the different structure of which the difference between the two forms seems principally to depend, nothing is said of the dissimilarities that exist in these organs between the two sexes. The description of the mandibles of *L. macrognatha* applies accurately to the male of *L. triangularis*, but not to the female, whose mandibles, as is known, have an appearance entirely different from that of the male's. In all the male specimens I have seen, the united length of the mandible and its claw are (as in *L. macrognatha* ♂) greater than the length of the cephalothorax or of the palpus — which is also seen in CLERCK's figure Pl. 3, Tab. 2, fig. 1 — and the claw is almost straight or slightly sinuated in the middle. In the female on the contrary the length of the mandible together with the claw is something less than that of the cephalothorax, and the claw is uniformly curved, as is said to be the case in *L. micrognatha*, both ♂ and ♀, in contradistinction to *L. macrognatha*. According however to MENGE's measures, the length of the mandible + the claw in the female of this last is not greater than, but only equal to that of the cephalothorax. — The mandible in *L. triangularis* ♂ is at the base slightly, outwards not at all thicker than the thighs of the 1st pair of legs: without the claw it is, at least sometimes (in dried specimens), as long as the tarsi of that pair, as WESTRING states, but which MENGE seems to deny to be the case in his *L. macrognatha*. — *L. micrognatha* appears to me to be nothing more than a variety (or rather race) of *L. macrognatha* or *triangularis*.

I. triangularis OHLEERT (Aran. d. Prov. Preuss., p. 44), of which OHLEERT himself has sent me specimens, is a totally different species, and identical with *I. emphana* WALCK. (= *I. scalarifera* MENGE¹⁾). This species, of which I captured a couple of specimens (females) at Pyrmont, but which has not hitherto been met with in Sweden, is easily distinguished both from *L. triangularis* (CLERCK) and *L. marginata* C. KOCH, by the circumstance, among others, that the

1) Preuss. Spinn., I, p. 110, Pl. 19, tab. 37.

cephalothorax is of *but one colour*, brownish yellow. — *L. triangularis* MENGE (Verzeichn. d. Danziger Spinn.), p. 69) seems also to be the same as *L. scalarifera* ID. or *L. emphana* WALCK.

(Pag. 97.) 4. ***L. phrygiana*** [= *Linyphia phrygiana* C. KOCH 1836].

Syn.: 1836. LINYPHIA PHRYGIANA C. KOCH, Die Arachn., III, p. 83, Taf. C, figg. 229, 230.

This species is not described by BLACKWALL. Besides in Sweden, Finnland and Lappland, it has been met with in Germany, Hungary, France and Switzerland, where I captured a specimen at St Moritz in Ober-Engadin. GRUBE (Verzeichn. d. Arachn. Liv-, Kur-u. Ehstl., p. 27 (441)) considers it as synonymous with *L. peltata* REUSS, which is not right.

(Pag. 99.) 5. ***L. hortensis*** [= *Linyphia hortensis* SUND. 1830].

Syn.: 1830. LINYPHIA HORTENSIS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 213.

1841. „ SYLVATICA BLACKW., The differ. in the numb. of eyes, etc., in Transact. of the Linn. Soc., XVIII, IV, p. 659.

1851. „ PRATENSIS BLACKW., A Catal. of Brit. Spid. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., VIII, p. 449.

1863. „ ALBICINCTA CAMBR., Descr. of 24 new spec. of Spid., in Zoologist, 1863, p. 171 (8567).

1864. „ PRATENSIS ID., Spid. of Gr. Brit., II, p. 215, Pl. XV, fig. 141.

1866. „ HORTENSIS MENGE, Preuss. Spinn., I, p. 108, Pl. 18, tab. 35.

The synonyms of this species are difficult to determine: only BLACKWALL'S, CAMBRIDGE'S and MENGE'S synonyms above given can be with certainty looked upon as indicating the same species as SUNDEVAL'S and WESTRING'S *L. hortensis*. The Rev. Mr. CAMBRIDGE, who sent me fullgrown specimens of both sexes of *L. pratensis* BLACKW., has himself informed me that his *L. albicincta* is only the young of this last species. — In *L. hortensis* ♀ the two white side-stripes on the abdomen each terminate in a curved line passing in towards the back a little above the anus, which lines often meet and form a cross-curve; but the small interval between these curved lines and

1) Neueste Schriften d. Naturforsch. Gesellsch. in Danzig, Bd IV, Hft 3.

the anus is *entirely black*, and is *not* bordered either below or at the sides by light bands or points, as is the case in *C. Koch's*, WALCKENAER'S and OHLERT'S *L. frutetorum*. In this latter species the field above the anus is terminated above by a yellowish cross-line usually interrupted in the middle, which is continued on both sides downwards, where it includes another short cross-line sometimes broken in the middle: *in the little black, semicircular or somewhat quadrangular field thus included in yellowish lines, are two yellowish points*. Both ♂ and ♀ of *L. frutetorum* (from Nürnberg) Dr. L. KOCH has presented me with: a female specimen from the neighbourhood of Paris I have received from Mr. SIMON, and two others I have myself captured at Amalfi in Italy. The ♂, of which also Prof. OHLERT sent me a couple of specimens (from Königsberg) is more like the ♂ of *L. pusilla* than of *L. hortensis*. As in the former, the lamina bulbi is *not* broader than the thigh, and the bulbus near the apex is armed with a *very long, stout, spiral, inward- and upward-curved bristle*: but it is easily distinguished from *L. pusilla*, the bulbus being far less complicated, *without* any appendage on the underside, where in *L. pusilla* ♂ it bears a long, slender, transparent appendage, that extends along the bulbus, and is continued upwards under the pars tibialis as a free projection. — *L. quadrata* REUSS (Zool. Misc., Arachn., p. 244 (251), Pl. XVII, fig. 3) certainly does not belong to *L. hortensis*, but to *L. frutetorum*, under which it is classed by C. KOCH. In *L. quadrata* also the field above the anus is said to be terminated above and at the sides by *three yellow stripes*, with *two yellow spots* in the *quadrangular* black field, which they include. The dark central band along the back of the abdomen in *L. quadrata* is farther described as *narrow*: in *L. hortensis* it is *broad*, much broader than the cephalothorax. — The specific names *frutetorum* and *quadrata* are almost contemporaneous: the former, which was given by C. KOCH in HERR.-SCHEFF., Deutschl. Ins., 127 (1834), is probably somewhat older, and at all events more certain than the latter.

L. pascuensis WALCK. (Ins. Apt., II, p. 251) is *possibly* identical with *L. hortensis* SUND. The description of the abdomen suits by no means ill those specimens of *L. hortensis*, which have the superior lateral stripes of the abdomen shortened behind; but in *L. pascuensis* the posterior central eyes are said to be no larger than the anterior (and the legs to be destitute both of hair and spines!), which is not the case in *L. hortensis*.

(Pag. 101.) 6. *L. pusilla* [= *Linyphia pusilla* SUND. 1830].

- Syn.*: 1830. LINYPHIA PUSILLA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 214 (*ad part.: saltem* "Var. β ").
1833. ,, FULIGINEA BLACKW., Charact. of some undescr. gen. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 349.
1834. THERIDIUM SIGNATUM HAHN, Die Arachn., II, p. 40, Taf. LIV, fig. 125.
1834. LINYPHIA PRATENSIS REUSS, Zool. Misc., Arachn., p. 251 (258), Pl. XVII, fig. 8.
1841. THERIDIUM AMPULLACEUM WALCK., H. N. d. Ins. Apt., II, p. 336.
1850. LINYPHIA SIGNATA C. KOCH, Uebers. d. Arachn.-Syst., 5, p. 18.
1864. ,, FULIGINEA BLACKW., Spid. of Gr. Brit., II, p. 216, Pl. XV, fig. 142.
1866. ,, PUSILLA MENGE, Preuss. Spinn., I, p. 109, Pl. 19, tab. 36 (*saltem* ♀).

The description given by SUNDEVALL of what he considers as the chief form of his *L. pusilla*, is too indefinite to admit of its being with anything like certainty referred to the same species as his "Var. β ," which is undoubtedly the male to *L. pusilla* WESTR. SUNDEVALL has probably under the name of *L. pusilla* confounded two or more species: it seems however to us reasonable, as one of them can with certainty be recognized, to let that one retain the specific name *pusilla*, the oldest by which the species has been described, and that which WESTRING in his "Förteckning" (p. 37) and I in my Rec. crit. (p. 107) restored, with rejection of the newer specific names *fuliginea*, *signata* and *pratensis*. As surely as BLACKWALL'S *L. pratensis* is = *L. hortensis* SUND., WESTR., so surely is *L. fuliginea* BLACKW. identical with *L. pusilla* SUND., WESTR. CAMBRIDGE has sent me from England both ♂ and ♀ of this species, under the name of *L. fuliginea* BLACKW. It appears to me certain, that BLACKWALL committed an error, when he catalogued, as a synonym for his *L. pratensis*, the spider which REUSS, C. KOCH and WALCKENAER describe under that name, but that WESTRING and MENGE were right in identifying with their *L. pusilla* or BLACKWALL'S *L. fuliginea* the *L. pratensis* of REUSS, KOCH and WALCK. I am however not perfectly sure, that the spider described by MENGE as the male of his *L. pusilla* is really so: its palpus appears to me too simple and too nearly similar to that of *L. frute-torum* C. KOCH. See also the preceding species, *L. hortensis*.

Specimens of *L. pusilla* SUND., both ♂ and ♀, I have collected in Germany at Pyrmont etc.

Linyphia pusilla BLACKW. 1834 is quite a different species, the name of which BLACKWALL afterwards (1852) changed to *L. tenuis* (A catal. of Brit. Spid., in Ann. and Mag. of Nat. Hist., 2 Ser., IX, p. 18). On this species see *L. pygmæa* WESTR., farther on.

Ther. signatum HAHN (*Th. ampullaceum* WALCK.), which C. KOCH enters as a separate species of the genus *Linyphia*, is unquestionably merely a variety of *L. pusilla*, such as I have often seen. *L. pusilla* is, as is known, very variable as regards the marking of the abdomen.

(Pag. 103.) 7. *L. peltata* [= *Linyphia peltata* REUSS 1834].

Syn.: 1834. LINYPHIA PELTATA REUSS, Zool. Misc., Arachn., p. 250 (256), Taf. XVII, fig. 7.

1841. „ RUBEA BLACKW.. The differ. in the numb. of eyes, etc., p. 661.

1864. „ „ ID., Spid. of Gr. Brit., II, p. 217, Pl. XV, fig. 143.

Of this remarkable species I have a female specimen from the Bavarian Alps, that I received from Dr. L. KOCH, and another that I myself captured at Pyrmont; a third specimen, from the neighbourhood of Upsala, I received from Dr. E. HAGLUND. It has also been captured in Westergötland (near Falköping) by Mr. G. EISEN. English specimens of both sexes have kindly been sent me by Mr. CAMBRIDGE. — The thighs of the 1st pair of legs are provided with 3 spines, those of the following pairs with 1, at least in the male: in the female the spine is very small or totally wanting in the last pair or pairs of legs. The number of the spines in the metatarsi — which spines are easily broken off — varies in my specimens between 2 and 5. — The light spots in the dark dorsal band of the abdomen (vid. BLACKWALL's figures, which are not very good), are often totally wanting; the shield-like figure on the abdomen's underside is also sometimes very indistinct.

(Pag. 105.) 8. *L. marginata* [= *Linyphia marginata* C. KOCH 1834].

Syn.: 1757. ARANEUS TRIANGULARIS CLERCK, Sv. Spindl., p. 71 (*ad partem*;) Pl. 3, tab. 2, fig. 2 (*figura feminae*).

1805. LINYPHIA TRIANGULARIS WALCK., Tabl. d. Aran., p. 70.

1834. „ MARGINATA C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 127, 21, 22.

1834. „ „ REUSS, Zool. Misc., Arachn., p. 247 (253), Pl. XVII, fig. 5.

1864. „ TRIANGULARIS BLACKW., Spid. of Gr. Brit., II, p. 212, Pl. XV, fig. 139.

Aranea Albini Scop. (Ent. carn., p. 396), which WALCKENAER refers to this species (Ins. Apt., II, p. 241), seems to me hardly to belong to it; at all events the description is too imperfect to admit of any certainty: it applies equally well to *L. triangularis* (CLERCK), *L. hortensis* SUND., and others. An equally uncertain synonym, also accepted by WALCKENAER, is *L. Walckenaeria* RISSO¹⁾. A person who is acquainted with the character of RISSO's descriptions, does not feel sure even that that spider is a *Linyphia* at all, and not e. g. a *Thomisus* or a *Lycosa*: according to RISSO in fact *Argiope Brünnichii* (Scop.) or *Epeira fasciata* WALCK., and *Argiope lobata* (PALL.) or *Ep. sericea* WALCK., belong to the genus *Segestria*! I have therefore, in company with GRUBE, WESTRING and others, retained the specific name *marginata* (given almost contemporaneously by C. KOCH and REUSS), which is the first by which the species before us has been recognizably described, if we except CLERCK's designation *triangularis*, which name however, as we have above (p. 46, sub. *Lin. triangularis* WESTR.) shown, belongs to *Lin. montana* WALCK., C. KOCH, BLACKW. etc., with which *L. marginata* was by CLERCK confounded. BLACKWALL's *L. marginata* does not belong to this species, but is = *L. montana* (CLERCK) WESTR. (See that spec. p. 44).

(Pag. 107.) 9. *L. thoracica* [= *Linyphia thoracica* REUSS 1834].

Syn.: 1834. LINYPHIA THORACICA REUSS, Zool. Misc., Arachn., p. 254 (261), Pl. XVII, fig. 10.

1841. „ CAUTA BLACKW., The differ. in the numb. of eyes, etc., p. 655.

• 1864. „ „ ID., Spid. of Gr. Brit., II, p. 222, Pl. XV, fig. 145.

A careful comparison of *L. thoracica* REUSS, WESTR. with BLACKWALL's description of *L. cauta*, has clearly shown us, that these two species are identical, as also BLACKWALL appears to have suspected. — C. KOCH erroneously takes up *L. thoracica* among the synonyms of his *Meta cellulana* (Die Arachn., VIII, p. 123). KOCH was unacquainted with this species, as was also WALCKENAER, who (Ins. Apt., IV,

1) RISSO's description of *L. Walckenaeria* is as follows: "Corselet arrondi, verdâtre, entouré sur les bords d'une ligne blanchâtre; abdomen vert, rayé de plusieurs rangées de points blancs en dessus, d'un blanc verdâtre sur les bords et sous le ventre. On voit qu'elle differt de la *Linyphie triangulaire* des auteurs. Long. 0.008, larg. 0.002. Séj. Sur la fleur du daucus carotta. App. Juillet. Août." (Risso, Hist. Nat. d. princ. productions de l'Europe mérid., V, p. 169).

p. 484) united it with *Lin. circumflexa* C. KOCH. — Besides in several places in Sweden, I have met with this spider in Denmark, at Sorøe in Seeland, as also in Germany at Kissingen.

(Pag. 109.) 10. *L. bucculenta* [= *Linyphia bucculenta* (CLERCK) 1757].

- Syn.*: 1757. *ARANEUS BUCCULENTUS* CLERCK, Sv. Spindl., p. 63, Pl. 4, tab. 1.
 1758. *ARANEA LINEATA* LINN., Syst. Nat., Ed. 10, I, p. 620.
 1767. „ *TRILINEATA* ID., Syst. Nat., Ed. 12, I, p. 1031.
 1789. „ *BUCCULENTA* OLIV., Encycl. Méth., IV, p. 211.
 1832. *LINYPHIA BUCCULENTA* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 109.
 1832. „ *CELLULANA* ID., ibid., p. 108 (*saltem* ♂).
 1832. *THERIDIUM ALBO-MACULATUM* Var. *b* ID., ibid., p. 117.
 1832. „ *RETICULATUM* HAHN, Die Arachn., II, p. 39, Taf. LIV, fig. 124.
 1841. *LINYPHIA RETICULATA* WALCK., H. N. d. Ins., Apt., II, p. 260.
 1841. *BOLYPHANTES TRILINEATUS* C. KOCH, Die Arachn., VIII, p. 67, Taf. CCLXXII, fig. 641.
 1843. *NERIENE TRILINEATA* BLACKW., A catal. of spid., etc., in Transact. of the Linn. Soc., XIX, II, p. 124.
 1843. „ *GRAMINICOLENS* ID., ibid., p. 125.
 1864. „ *TRILINEATA* ID., Spid. of Gr. Brit., II, p. 279, Pl. XIX, fig. 193.
 1866. *STEMONYPHANTES TRILINEATUS* MENGE, Preuss. Spinn., I, p. 139, Pl. 26, tab. 58.

BLACKWALL himself says of his *Nerienne graminicolens*, that it is probably only a variety of *N. trilineata*, as also that it seems to be identical with *Lin. cellulana* SUND., which, according to SUNDEVALL's collection of types, in no way differs from *Lin. bucculenta* (CLERCK) or *Nerienne trilineata*. — MENGE is of opinion, that CLERCK's *Ar. bucculentus* is not the same as the species before us, but identical with *L. frenata* REUSS. As ground for this view he urges, that in CLERCK's species, according to the description, the cephalothorax is hairy and the abdomen round, that the legs, according to the figure, are without spots, the cephalothorax without any black central line (in the description it is simply stated to be light-brown!) and the abdomen white, yellowish behind. — CLERCK's spider was a female: in that sex the cephalothorax is as free from hair in *L. frenata* as in "*Ar. trilineata*"; the abdomen is oval also in *L. frenata*, and in *Ar. trilineata* LINN. the cephalothorax has a broad black stripe at the border: so that the distinctive marks in CLERCK's spider here

adduced do not better suit *L. frenata* than *Ar. trilineata*. Of the legs CLERCK says in his description that they were "a little darkish at the joints." The description of the design of the abdomen agrees far better with *Ar. trilineata*, even though the lighter ground-colour in CLERCK's figure seems more to indicate *L. frenata*. Neither can I, like MENGE, discover, that the expression "*bucculentus*," *full-cheeked*, is more applicable to *L. frenata* ♀ than to *Ar. trilineata*. The most important objection to the identity of *Ar. bucculentus* and *Ar. trilineata* would seem to be, that, according to CLERCK, *Ar. bucculentus* has the 1st pair of legs longer than the 4th, which applies to *L. frenata*, but not to *Ar. trilineata*; it is however also stated that the 4th pair is longer than the 2nd, and that suits *Ar. trilineata*, but not *L. frenata*! *Ar. trilineata* LINN. is a spider very common in the neighbourhood of Stockholm and throughout Sweden, whereas *L. frenata* is comparatively rare. Under these circumstances, and as the reasons adduced by MENGE do not appear to me sufficiently binding, I have not thought it advisable to abandon the determination of *Ar. bucculentus* CLERCK generally received by *Swedish* arachnologists. — *L. bucculenta* WALCK. (Ins. Apt., II, p. 274) does not belong to this species, but to *L. socialis* SUND., as has been observed by BLACKWALL and WESTRING.

(Pag. 110.) 11. **L. frenata** [= *Linyphia frenata* REUSS 1834].

- Syn.: 1834. LINYPHIA FRENATA REUSS, Zool. Misc., Arachn., p. 262 (269), Pl. XVIII, fig. 4.
 1836. THERIDIUM PALLIDUM C. KOCH, Die Arachn., III, p. 64, Taf. XCIV, fig. 216.
 1843. LINYPHIA PALLIDA BLACKW., A catal. of Spid. etc., p. 126.
 1864. „ FRENATA ID., Spid. of Gr. Brit., II, p. 228, Pl. XVI, fig. 151.
 1866. BOLYPHANTES FRENATUS MENGE, Preuss. Spinn., I, p. 137, Pl. 26, tab. 57.
 1867. LINYPHIA ALBO-MACULATA OHL., Aran. d. Prov. Preuss., p. 81.

(Pag. 113.) 12. **L. crypticola** [= *Linyphia nebulosa* SUND. 1830].

- Syn.: 1830. LINYPHIA NEBULOSA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 218 (excl. "Var. γ").
 1837. „ FURCULA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 10.
 ?1837. „ CIRCUMFLEXA ID., ibid.
 1841. „ VIVAX BLACKW., The differ. in the numb. of eyes, etc., p. 657.
 1851. „ CRYPTICOLA WESTR., Förteckn. etc., p. 37.
 1864. „ VIVAX BLACKW., Spid. of Gr. Brit., II, p. 221, Pl. XVI, fig. 146.
 1866. LEPTYPHANTES CRYPTICOLA MENGE, Preuss. Spinn., I, p. 133, Pl. 25, tab. 54.
 1867. LINYPHIA CIRCUMFLEXA OHL., Aran. d. Prov. Preuss., p. 45.

Of the synonyms taken up by WESTRING (and MENGE) under the head of *Linyphia crypticola* (*Leptyphantes crypticola*), besides SUNDEVALL'S *L. nebulosa* Var. α , which is absolutely certain, only *L. furcula* C. KOCH, and probably *L. circumflexa* ID., belong to this species. Also GRUBE acknowledges (Verzeichn. d. Arachn. Liv-, Kur- u. Ehstl., p. 27 (441)) *L. furcula* as a synonym of his *L. nebulosa* SUND.: similarly NORDMANN (Erst. Verzeichn., p. 14). *Lin. crypticolens* WALCK., on the contrary, is a wholly different species, and the same that C. KOCH has called *Meta cellulana* (*Nesticus cellulanus* (CLERCK) NOB.), as C. KOCH, BLACKWALL and others have perceived, and as I convinced myself when I obtained the opportunity of examining numerous (German) specimens of C. KOCH'S *Meta cellulana*. WALCKENAER'S with special emphasis repeated assurance, that the legs of his *L. crypticolens* are without spines (Ins. Apt., II, p. 276, 278) shows clearly that that species has nothing to do with *L. nebulosa* SUND. — In *L. circumflexa* C. KOCH the legs appear to be without the dark rings that are found in *L. nebulosa*, according to both KOCH (Die Arachn., XII, p. 128, fig. 1050) and OHLERT (Aran. d. Prov. Preuss., p. 46). Such rings are however present in a ♂-specimen sent by OHLERT to me, and which is identical with *L. nebulosa* SUND., and accordingly OHLERT'S synonym must be considered as sure, even if C. KOCH'S *L. circumflexa* should not belong to this species.

MENGE has been kind enough to send me specimens of his *Leptyphantes crypticola*. — *Lin. vivax* BLACKW., of which I have received a ♂-specimen from Mr. CAMBRIDGE, is also a perfectly sure synonym for *L. nebulosa*. — SUNDEVALL has erroneously classed *L. minuta* BLACKW. or *L. domestica* REUSS as a variety ("Var. γ ") of this species.

(Pag. 114.) 13. **L. domestica** [= *Linyphia minuta* BLACKW. 1833
+ *Linyphia leprosa* OHL. 1865].

Lin. minuta BLACKW.:

Syn.: 1830. LINYPHIA NEBULOSA Var. γ SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 219.

1833. „ MINUTA BLACKW., Charact. of some undescr. gen. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 191.

1834. „ DOMESTICA REUSS, Zool. Misc., Arachn., p. 259 (265), Pl. XVIII, fig. 1.

1864. „ MINUTA BLACKW., Spid. of Gr. Brit., II, p. 218, Pl. XV, fig. 144.

1866. LEPTYPHANTES MUSCICOLA MENGE, Preuss. Spinn., p. 133, Pl. 25, tab. 54.

"Specimen masculum seta gracili in parte palporum
patellari" (*Lin. leprosa* OHL.):

1865. LINYPHIA LEPROSA OHL., Arachn. Studien, p. 12.

1867. " " ID., Aran. d. Prov. Preuss., p. 47.

WALCKENAER'S *L. domestica* is probably a different species from WESTRING'S *L. domestica*, which, with WESTRING and BLACKWALL, we consider as the spider which REUSS has described under that name. Of *Leptyphantès muscicola* MENGE, I have, through the liberal kindness of MENGE himself, had typical specimens to examine. Swedish specimens of *L. domestica*, which I sent to CAMBRIDGE, have by him been pronounced identical with *L. minuta* BLACKW. — *L. minuta* is particularly common in Sweden. I have also specimens from the Norwegian Finnmark (given me by Prof. TH. FRIES), from Finland (AL. v. NORDMANN), and from the neighbourhoods of Kissingen and Travemünde in Germany.

WESTRING mentions (p. 116) a ♂-specimen which, instead of the coarse, straight or slightly *∞*-curved bristle on the patellar joint of the palpus, had a fine, pointed bristle curved forwards on the same spot. This is a quite different, though extremely similar species, which has been described by OHLERT under the name of *L. leprosa*, and of which I have specimens, both from Sweden, Finland and England, the latter sent me by CAMBRIDGE under the name of *L. confusa* CAMBR. Prof. OHLERT has himself sent me a full-grown male and some younger specimens of both sexes of his *L. leprosa*. — The long bristle on the patellar joint is, in *L. leprosa*, finer than the spines of the legs, gradually tapering to the extremity; in *L. minuta* it is somewhat coarser than the spines, and a little thicker between the middle and the tapering extremity. The patellar joint itself, which in *L. minuta* is in front drawn out into a short blunt process, from which the coarse bristle issues, is there, in *L. leprosa*, regularly and suddenly rounded off. Under the microscope the bulbus genitalis also shows some peculiarities: I will only mention that in *L. leprosa* the last but one of the leaf-like parts it contains ("der Eindringer" MENGE?) is longer than the rest and cloven at the apex, and its two unequal segments each again cloven at its termination into two short divergent tooth-like parts. In *L. minuta* "der Eindringer" has an entirely different appearance (conf. MENGE, loc. cit.). In my specimens of *L. leprosa* the thighs of the 1st pair alone have 1 spine (as in *L.*

minuta): the anterior tibiae have 4 or 5 spines, the posterior only two; the anterior metatarsi have near the base 2—3 spines, the posterior only one. In *L. minuta*, all the metatarsi have three, or at least two spines. In form and colour there is no other easily seen differences between the two species, unless it be that the dark rings on the legs are less distinct in *L. leprosa* than in *L. minuta*.

SUNDEVALL was, as we have already (under the head of the preceding species, *L. crypticola* WESTR.) remarked, acquainted with *L. minuta*, which he considered as a variety of his *L. nebulosa*.

(Pag. 116.) 14. *L. tenebricola* [= *Linyphia alacris* BLACKW. 1853].

Syn.: ? 1845. LINYPHIA TERRICOLA C. KOCH, Die Arachn., XII, p. 125, Taf. CCCCXXV, figg. 1047, 1048 (*ad partem*).

1853. „ ALACRIS BLACKW., DESC. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., XI, p. 20.

1856. „ PYGMÆA THOR., Rec. crit., p. 108.

1864. „ ALACRIS BLACKW., Spid. of Gr. Brit., II, p. 235, Pl. XVII, fig. 157.

I cannot think that the species WESTRING has described under this name, is the right *L. tenebricola* REUSS. The abdomen of that spider is distinguished by "zwei rundlichen weissen Flecken auf der hintern Hälfte der Seite," which spots in WESTRING'S *L. tenebricola* are replaced by a long, usually unbroken, light line along the side of the abdomen. The above-cited description of these spots, as well as of the rest of the marking in *L. tenebricola* REUSS, evidently demonstrates that that spider is identical with the species called by WESTRING *L. pygmæa*, and which I, in my Rec. crit. (p. 108), have described under the name of *L. arcuata*. On the other hand C. KOCH'S description of *L. terricola* corresponds so well with *L. tenebricola* WESTR., that I should not have hesitated to adopt that name for this latter, if totally different species had not by BLACKWALL, OHLERT and MENGE been described as "*L. terricola* KOCH." In KOCH'S figures (l. c.) the colour of the cephalothorax is darker than in *L. tenebricola* WESTR., but in the description it is stated to be yellowish brown ("gelb-braun"), which suits that species. The back central line or band along the anterior part of the back of the abdomen, which unites the foremost of the triangular, oblique, black spots on either side, which farther back converge to transversal angular marks, appears to be a tolerably constant feature in this species: it is mentioned in KOCH'S

description of his *L. terricola*, and is shown also in his figures. The colour of the abdomen is however subject to much variation. KOCH has probably, under the name *L. terricola*, confounded other species with the *L. alacris* of BLACKWALL, among them *L. terricola* BLACKW.¹⁾ and perhaps *Bathypantes terricola* MENGE. — *L. terricola* BLACKW. is widely different from *L. tenebricola* WESTR., and is identical with *L. pygmaea* WESTR. (*tenebricola* REUSS, NOB.), as I see by specimens kindly given me by CAMBRIDGE, and as will be shown further on under the head of that species. On the other hand *L. terricola* SILL²⁾ is perhaps = *L. tenebricola* WESTR. — The description of the *L. terricola* of OHLERT shows at once that it is the same as *L. dorsalis* REUSS, WESTR. (*L. Claytoniae* BLACKW.), as I also have found established by the comparison of typical specimens sent me by WESTRING and OHLERT. — *Bathypantes terricola* MENGE is identical with *L. nigrina* WESTR. (*L. pulla* BLACKW.), according to specimens of both sexes, kindly given me by MENGE himself. — As the specific name "*terricola* C. KOCH" has already been applied to at least three different spiders, I have not thought it advisable to designate by the same name an additional species, WESTRING'S *L. tenebricola*, although this spider does seem to me to correspond best with C. KOCH'S description and figures of *L. terricola*. I have therefore adopted the first *certain* name by which the species has been described. A male specimen, sent to CAMBRIDGE, has by him been declared identical with *L. alacris* BLACKW.; he has also kindly sent me the typical specimens of the *Lin. alacris* of BLACKWALL.

In *L. alacris*, or *tenebricola* WESTR., the vulva forms, seen from the side, a strong, rounded protuberance, the central, more projecting

1) To this species (= *L. pygmaea* WESTR.) the following passage seems to apply: "Nicht ungewöhnlich ist die Rückenfarbe verdunkelt und die Bogenstreifen kaum sichtbar, zuweilen so sehr, dass nur über den Spinnwarzen gelbliche Quersflecken und *in den Seiten weissliche Fleckchen* zu sehen sind." (KOCH, l. c., p. 126).

2) "... Vorderleib dunkel gelbbraun mit dunkleren Strahlenstrichen. Die Fresszangen von derselben Farbe. Die Taster rötlich ockergelb. Der Hinterleib oben gelbbraun, auf dem Rücken vorne ein in der Mitte etwas erweiterter Längstreif kaum bis in die Hälfte der Länge reichend, und hinter demselben seitwärts geschwungen, dreieckige Bogenstreifen bis zu den Spinnwarzen hintereinanderliegend, schwarz, zwischen diesen beiderseits der Länge nach hellweisse Flecken aus kleinen kleinen Punkten bestehend; die Seiten und der Bauch schwarz. Alle Beine gleichfarbig ockergelb. Uebrigens ändert diese Spinne mannigfach ab. Länge $1\frac{1}{2}$ —4" (probably a misprint for $1\frac{1}{2}$ —2")." SILL, Dritter Beitrag z. Kenntn. d. Crust. u. Arachn. Siebenbürgens, in Verhandl. u. Mittheil. d. Siebenbürg. Vereins f. Naturwissenschaft. zu Hermannstadt, Jahrg. XIII (1863), p. 44.

part of which is reddish brown, with a little black tooth in the posterior margin. The tibial joint of the male's palpi, which is almost double as long as the patellar joint, is *incrassated and strongly convex longitudinally on the underside*. The patellar joint bears a long, slightly curved bristle of about the same substance as the spines of the legs; the tibial joint has, near its base, another, slightly shorter and more slender bristle; these two bristles are almost parallel.

(Pag. 117.) 15. **L. alticeps** [= *Linyphia alticeps* SUND. 1833].

Syn.: 1833. LINYPHIA ALTICEPS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 261 (*saltem ad part.*).

1866. „ „ MENGE, Preuss. Spinn., I, p. 134, Pl. 25, tab. 55.

1867. „ ALPESTRIS OHL., Aran. der Prov. Preuss., p. 48.

"Mas junior" of *L. alticeps* WESTR. (p. 118) belongs to the next following species, *L. affinis* WESTR., described by WESTRING in the Addenda to Aran. Suec., p. 595.

Though the males of *L. alticeps* and *L. affinis* are easily distinguished, it is not easy to assign to each of these species its proper synonyms. MENGE's *Bolyphantes alticeps* however I refer without hesitation to *L. alticeps* SUND., WESTR., though his description differs in a few particulars from what I believe myself to have observed: for example, according to him the palpus-claw is destitute of teeth (some however appear in the figure)¹, and the tarsal claws have only about 10 teeth, whereas I have seen a greater number, 14—18 on the first pair of legs. Neither can OHLERT's *Bol. alpestris*, which is stated to have *eight* teeth on the female's palpal claw, and its head "*much elevated and drawn out forwards*," be any other than *L. alticeps*. But such is not the case with BLACKWALL's *L. luteola* or *alticeps*²). It is true that BLACKWALL's description of the coarse bristle on the patellar joint of the male's palpi agrees better with *L. alticeps* SUND. than with *L. affinis*, but BLACKWALL's figure (fig. 149) nevertheless in certain respects shows a better agreement with *L. affinis*. In *L. alticeps* SUND. ♂ the inferior central eyes are not situated at the extreme end of the head, as in that figure (and in *L. affinis*), but somewhat *under* the extremity of the head; neither does the head rise over the breast

1) "Mit keinen Zähnen" (loc. cit., p. 135) is perhaps a misprint for "mit kleinen Zähnen."

2) Spid. of Gr. Brit., II, p. 226, Pl. XIV, fig. 149.

gradually and with the same inclination, as in BLACKWALL's figure and in *L. affinis*, but it rises more abruptly, forming an angle with the thorax. This has seemed to me to indicate that BLACKWALL's *L. luteola* or *alticeps* is identical with *L. affinis*, an opinion which derives support from the circumstance that CAMBRIDGE has sent me specimens of *L. affinis* under the name of *L. alticeps* BLACKW.; and he has just lately written to inform me that the spider described by WESTRING under the name of *L. alticeps* has never yet been met with in England. — That SUNDEVALL confounded *L. affinis*, or *L. luteola* BLACKW., with the true *L. alticeps*, is probable from his having considered "*L. luteola*" to be a synonym of his *L. alticeps*¹⁾. Even by WESTRING the former was long considered as a mere variety of the latter, and it was only in the "Addenda" to his Aran. Suec., that he first classed it as an independent species. — As the specific name *luteola* is far older than *affinis* (vid. p. 63), it is clear that this latter name must give place to the former.

Even *Bolyphantes alpestris* C. KOCH (Die Arachn., VIII, p. 69, fig. 642) seems to me to belong to *L. luteola* or *affinis*, not to *L. alticeps* SUND. In the first place it is said to be *far less* than *L. bucculenta* (*Bol. trilineatus* C. KOCH), which may possibly be said of *L. luteola*, but not of *L. alticeps*, which is but little less than *L. bucculenta*. Moreover it is not mentioned that the head is prominent before, a circumstance, which could hardly have escaped KOCH's notice, had he had *L. alticeps* before him, but may more easily be overlooked in *L. luteola*. Lastly it is stated of the bristle on the patellar joint of the palpus, that it is "abgestutzt," i. e. *truncated*, and according to WESTRING's own words this bristle is "in *L. affinis* apice *truncata*²⁾", in *L. alticipite acuta*." To these reasons, derived from the description, may be added another, drawn from statements relative to the haunts of *B. alpestris*: it appears, according to KOCH, who met with it in the Nassfelder-Alps in Southern Germany, to belong in those parts exclusively to the Alpine regions (l. c., p. 70). At St Moritz in Ober-Engadin in Switzerland I took several specimens, all females, which exactly correspond to female specimens of *L. luteola* from Sweden, Finland and Germany, and which are easily distinguished from *L. alticeps* by the palpal claw having, in general, only *three* or

1) See BLACKWALL, A Catal. of Brit. Spid. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., IX, p. 17.

2) Seen through the microscope, the blunt and at the extremity somewhat dilated bristle exhibits a few small spines or teeth at the apex, generally one in the middle and a pair of still less teeth on each side of it.

four teeth. I did not find *L. alticeps* there. On these grounds I am driven to conclude that *L. luteola* is the same species that C. KOCH has described under the name of *Bolyphantes alpestris*.

The male of *L. luteola* BLACKW. or *L. affinis* WESTR. is easily distinguished from *L. alticeps* by the features indicated by WESTRING: the head is less projecting, not drawn out into a point between the 4 central eyes, the anterior row of eyes is *straight*, not curved downwards, etc. The females of these two species are on the contrary difficult to distinguish. WESTRING, who had but one specimen of that sex to examine, says, that in the female *L. affinis* the distance from the margin of the clypeus to the anterior central eyes is only $1\frac{1}{2}$ times, not, as in *L. alticeps*, twice as great as the length of the area of the central eyes: neither is the head, as in *L. alticeps*, elevated between the four central eyes. The first-mentioned feature I have been unable to verify in any of the many females which, together with an almost equally numerous collection of males of *L. luteola* or *affinis*, were sent to me by v. NORDMANN, who captured them at Helsingfors, and doubtless collected both males and females at the same period and in the same localities. The said distance appears to me in these Finnish specimens to be almost as in *L. alticeps*, i. e. double the length of the area of the central eyes. (In a Swedish specimen from Gotland, given me by Mr. EISEN, as also in a female from England sent me by CAMBRIDGE, that distance is however somewhat less, and more corresponding with WESTRING's description). But they are distinguished without difficulty from *L. alticeps* by the *extremity of the head being, when seen from above and behind, limited in front of the two posterior central eyes by a slightly curved or almost straight line*, whereas in ♀ of *L. alticeps*, the head, contemplated from the same point of view, appears *triangularly pointed*. They may also be distinguished by the different number of teeth on the palpal claw. These teeth are, in general, only *four* or *three* in *L. luteola* (rarely one or two more), but in *L. alticeps* they are (always?) *eight* in number¹⁾. In other respects, excepting

1) The number of teeth on the *tarsal* claws also appears to be something greater in *L. alticeps* than in *L. luteola*: in the former I have found on the 1st pair 14 teeth on the one and about 18 on the other superior claw (both in the ♂ and ♀). In *L. luteola* I have found the numbers respectively 14 and 16 in the ♀, and 12 and 14 in the ♂. The number of these teeth, which it is difficult to count, may be somewhat variable, and is not the same on all the different pairs of legs.

the somewhat smaller size, I see no difference either in form or colour. — Of *L. luteola* or *affinis* I have specimens not only from Finnland, Germany, Switzerland and England, but from various parts of Sweden, as from Göteborg (a male type-specimen given me by WESTRING), from Upsala and Stockholm, as also from Östergötland, Wermland and Gotland. From Prof. TH. FRIES I have received a young one, which seems to me to belong to this species, from the Norwegian Finnmark (Maasöe). The specimens of *L. alticeps* in my collection are partly from Göteborg (both ♂ and ♀), where this species is common, partly from Östergötland (♂), where it has been captured by Dr. HAGLUND.

Bolyphantes stramineus C. KOCH (Die Arachn., VIII, p. 71, fig. 643) is perhaps but a variety of *L. luteola* or *Bol. alpestris*. From that species, as well as from *L. index*, it should however, according to the description, differ in having *no black margin* on the cephalothorax. From *L. index* it seems also to differ by a dissimilar form of the vulva. — *Bol. stramineus* MENGE, of which MENGE kindly sent me specimens of both sexes, from Danzig, is identical with *L. affinis* WESTR. or *luteola* BLACKW.

In that species (*L. luteola*) the bulbus genitalis, near the base, has an apophysis running out into two strong points forming a somewhat obtuse angle with each other, and one of which points outwards and somewhat backwards: the tibial joint, on the exterior surface, beneath, swells out into an almost right-angled protuberance with a bristle at its apex, as in *L. alticeps*. — *L. luteola* or *affinis* ♂ differs in a manner visible at the first glimpse from ♂ of *L. index* THOR., which MENGE considers as synonymous with his *Bol. stramineus*, in as much as that the head of *L. index* ♂ is *not* unusually high: the height of the clypeus is *less* than the breadth of the eye-area, and the anterior row of eyes is *slightly curved backwards* (i. e. has its convexity directed towards the mouth) in *L. index* ♂, whereas in *L. luteola* ♂ the clypeus is considerably higher than the the breadth of the eye-area, and the anterior row of eyes is *straight*. (in *L. alticeps* ♂ it is *curved forward*). In *L. luteola* the metatarsi have, between their middle and basis, 3 or 4 spines, whereas in *L. index* the metatarsi have there only *one* spine towards the base: those of the posterior legs at least have another very fine spine near the extremity, beneath (conf. Rec. crit., p. 107), which latter has escaped WESTRING's notice. These observations on *L. index* are from examination of

the specimen, that served as type for my own and WESTRING's descriptions. We shall return to this species further on.

WALCKENAER (Hist. Nat. d. Ins. Apt., II, p. 367) includes *L. alticeps* in the synonyms of his *Argus cornutus* (*Walckenaera acuminata* BLACKW.) which of course is a mistake.

(Pag. 595.) 15. *bis*. *L. affinis* [= *Linyphia luteola* BLACKW. 1833].

Syn.: 1833. LINYPHIA LUTEOLA BLACKW., Charact. of some undescr. gen. etc., p. 192.

1837. BOLYPHANTES ALPESTRIS C. KOCH, Uebers. d. Arachn.-Syst., I, p. 9.

1841. " " ID., Die Arachn., VIII, p. 69, Taf. CCLXXII, fig. 642.

1864. LINYPHIA ALTICEPS BLACKW., Spid. of Gr. Brit., II, p. 226, Pl. XVI, fig. 149.

1866. BOLYPHANTES STRAMINEUS MENGE, Preuss. Spinn., I, p. 136, Pl. 25, tab. 56.

Concerning this species see the preceding article, *L. alticeps* WESTR.

(Pag. 119.) 16. *L. pallescens* [= *Linyphia insignis* BLACKW. 1841].

Syn.: 1841. LINYPHIA INSIGNIS BLACKW., The differ. in the numb. of eyes etc., p. 662.

1851. " PALLESCENS WESTR., Förteckn. etc., p. 37.

1864. " INSIGNIS BLACKW., Spid. of Gr. Brit., II, p. 328, Pl. XVII, fig. 160.

1866. HELOPHORA PALLESCENS MENGE, Preuss. Spinn., I, p. 227, Pl. 23, tab. 50.

BLACKWALL's description of *L. insignis* agrees admirably with this remarkable species. The only deviation regards the colour of the abdomen, which in *L. insignis* is said to have on its upper part a row of angular lines, which however are sometimes absent, as is the case in all the (Swedish and Finnish) specimens of *L. pallescens* that I have seen. The accurate description given of the organs of copulation in both sexes however removes all doubt of the identity of these species. Moreover specimens of *L. pallescens*, which I sent to CAMBRIDGE, have been declared by him to be identical with *L. insignis* BLACKW. — MENGE's *Helophora pallescens* belongs undoubtedly to this species, although his description of the number of the spines of the legs is not easily applied to it. — The name *L. insignis* has right of priority before that of *L. pallescens*.

(Pag. 121.) 17. *L. rufa* [= *Linyphia scopigera* GRUBE 1859].

Syn.: 1859. LINYPHIA SCOPIGERA GRUBE, Verzeichn. d. Arachn. Liv-, Kur- u. Ehstl., p. 59 (470) (♂; ♀ *ad part*).

1866. PEDINA CRISTATA MENGE, Preuss. Spinn., I, p. 125, Pl. 23, tab. 49.

Theridium rufum REUSS (Zool. Misc., Arachn., p. 218 (223), Pl. XV, fig. 3) appears to be too uncertain a synonym, to allow of the specific name *rufa* being retained for this *Linyphia*; even WESTRING cites it with a note of interrogation. The description of the female of *Ther. rufum* does not badly suit WESTRING'S *L. rufa*, but then the peculiar structure of the male's palpi so characteristic of this species is not mentioned by REUSS, and what he says of the palpi of ♂ of his *Ther. rufum* but ill suits WESTRING'S *Lin. rufa*. MENGE also rejects the specific name *rufa* REUSS, and calls this spider *Pedina cristata*; but as he had already employed the specific name *cristatus* for a *Bathypantes* (l.c., p. 121), which genus, as well as *Pedina*, I unite with *Linyphia*, I cannot adopt the name *cristata* for the species before us; moreover GRUBE'S *L. scopigera*¹⁾ belongs to this species, and that name is prior to MENGE'S. The typical specimen of *L. scopigera* ♂, Prof. GRUBE has himself kindly sent me for examination. His short description seems however to imply that he has confounded some other species with the female of *L. scopigera*.²⁾ — This species appears to have been unknown to BLACKWALL.

(Pag. 123.) 18. *L. comata* [= *Linyphia bicolor* (BLACKW.) 1833].

Syn.: 1833. NERIENE BICOLOR BLACKW., Charact. of some undescr., gen. etc., p. 384.

1834. LINYPHIA COMATA REUSS, Zool. Misc., Arachn., p. 219 (225), Pl. XV, fig. 4.

1841. ARGUS COMATUS WALCK., H. N. d. Ins. Apt., II, p. 353.

1864. NERIENE BICOLOR BLACKW., Spid. of Gr. Brit., II, p. 250, Pl. XVII, fig. 168.

1866. BATHYPANTES COMATUS MENGE, Preuss. Spinn., I, p. 118, Pl. 21, tab. 43.

Specimens of this species have been declared by CAMBRIDGE identical with *Nerienne bicolor* BLACKW., whose description also perfectly

1) "... Clava palporum maris ad basin processu parvo, fasciculum setarum gerente, ornata, setis parallelis, extremitate incrassatis, fissis." (Loc. cit.).

2) "... abdomine sordide olivaceo vel fusco concolore vel striis transversis ad extremitatem congestis ..." (Loc. cit.).

suits *L. comata* WESTR. REUSS' synonym also seems to me quite certain, of which however WESTRING and MENGE are not so fully persuaded, though they have adopted the specific name given by REUSS.

(Pag. 125.) 19. **L. socialis** [= *Linyphia socialis* SUND. 1833].

- Syn.*: 1833. LINYPHIA SOCIALIS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 260.
 1833. „ ANNULIPES BLACKW., Charact. of some undescr. gen. etc., p. 348.
 1834. „ TIGRINA REUSS, Zool. Misc., Arachn., p. 256 (262), Pl. XVII, fig. 11.
 1837. „ SEPIUM C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 10.
 1841. „ BUCCULENTA WALCK., H. N. d. Ins. Apt., II, p. 274.
 1845. META TIGRINA C. KOCH, Die Arachn., VIII, p. 130, Taf. CCCXXVI, figg. 1051, 1052.
 1864. LINYPHIA SOCIALIS BLACKW., Spid. of Gr. Brit., II, p. 222, Pl. XVI, fig. 147.
 1866. DRAPETISCA „ MENGE, Preuss. Spinn., I, p. 141, Pl. 27, tab. 59.

(Pag. 126.) 20. **L. pygmæa** [= *Linyphia tenebricola* REUSS 1834].

Var. α (forma principalis):

- Syn.*: 1834. LINYPHIA TENEBRICOLA REUSS, Zool. Misc., Arachn., p. 260 (266), Pl. XVIII, fig. 2.
 1851. „ PYGMÆA WESTR., Förteckn. etc., p. 38.
 1856. „ ARCUATA THOR., Rec. crit., p. 108.
 1866. BATHYPHANTES PYGMÆUS MENGE, Preuss. Spinn., I, p. 114, Pl. 20, tab. 40.

Var. β , *terricola*:

- ?1845. LINYPHIA TERRICOLA C. KOCH, Die Arachn., XII, p. 125 (*ad partem*).
 1853. „ „ BLACKW., Supplem. to a Catal. of Brit. Spid., in Ann. and Mag. of Nat. Hist., 2 Ser., XI, p. 118.
 1864. „ „ ID., Spid. of Gr. Brit., II, p. 231, Pl. XVI, fig. 163.

Var. γ , *tenuis*:

- †1834. LINYPHIA PUSILLA BLACKW., Researches in Zool., p. 392 (*sec.* BLACKW., Spid. of Gr. Brit.).
 1834. „ „ ID., Charact. of some undescr. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., V, p. 53.
 1852. „ TENUIS ID., A Catal. of Brit. Spid. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., IX, p. 18.
 1864. „ „ ID., Spid. of Gr. Brit., II, p. 230, Pl. XVI.

Linyphia arcuata THOR. or *L. pygmæa* WESTR. is certainly the same spider, which REUSS has described under the name of *L. tenebricola*. In this species the abdomen is said to be *dark brownish grey*, with a row of *light angular lines* on the upper part, and *two rounded white spots on the sides*, one in the middle of the side, the other near the spinners — a description, which exactly suits the species now before us, but not *L. alacris* BLACKW., which WESTRING has described under the name of *L. tenebricola*. Both *L. tenebricola* WESTR. and *L. pygmæa* ID. are probably included in the *L. terricola* of C. KOCH: on this subject vid. p. 57, *L. tenebricola* WESTR.

BLACKWALL'S *L. terricola* I cannot distinguish from WESTRING'S *L. pygmæa* or *L. tenebricola* REUSS. The armature of the legs (see WESTRING'S description!), as also the structure of the *organs of copulation*, is, as far as I have been able to see, absolutely the same in both, and only the colour, which however varies much, appears to be in general somewhat lighter in the English "*L. terricola*"; this form has on the sides of the abdomen a longitudinal yellowish band, which however is often broken in two, or replaced by two rounded spots, as in most of my Swedish specimens of *L. tenebricola*. In ♂ of this latter form, the cephalothorax is in general dark, blackish, and the abdomen not only on the underside, but also above, very dark, almost black, generally without any lighter design: in BLACKWALL'S *L. terricola* ♂ the cephalothorax is in general greyish yellow, with a fine black border; the upper part of the abdomen is of the same light ground-colour as in the female, with a row of dark angular lines, and blackish on the underside. — The *L. tenuis* (or *L. pusilla*) of BLACKWALL, of which species, as well as of *L. terricola* BLACKW., I have received specimens, determined by BLACKWALL himself, from the Rev. Mr. CAMBRIDGE, is certainly not specifically different from *L. tenebricola* REUSS and *L. terricola* BLACKW.; the specimens I possess of *L. tenuis* appear to be distinguished from *L. terricola* BLACKW. only by having the dark angular lines on the upper part of the abdomen more or less strongly dilated at the extremities, or even interrupted in the middle, in which case they form a double row of blackish spots along the back. — Both of "*L. pygmæa*" WESTR., "*L. terricola*" BLACKW. and "*L. tenuis*" ID., I have myself captured specimens in various parts of Germany; a ♀ with the abdomen of an almost uniform brownish colour has been captured in Skåne by Dr. T. TULLBERG.

In *L. tenebricola* REUSS, NOB., or *L. pygmæa* WESTR., the female's vulva, seen from the side, forms a generally strong protuberance,

which bears on its posterior side, towards the apex, a fine, somewhat clublike process or obtuse spine directed downwards and *slightly curved forwards*. As for the male's organs of copulation, see MENGE's figures, loc. cit. The tibial joint of the palpus has, as WESTRING observes, a stronger bristle on its anterior side. The hook-like accessory lamina (das Nebenschiffchen: MENGE) shows on its side, nearer the base, a strong tooth, and often (perhaps always?) another, more slender, nearer the apex, which teeth are not seen in MENGE's figures.

Theridium pygmæum SUND. (Vet.-Akad. Handl. f. 1829, p. 121) should not to be quoted under this species. The *diagnosis* and the description of the *abdomen* and *legs* of the *female* of *Th. pygmæum* evidently belong to *Singa trifasciata* C. KOCH (*Epeira Herii* BLACKW.), as WESTRING has already observed, and that species is also found in SUNDEVALL's collection under the name of *Th. pygmæum* (see WESTR., Aran. suec., p. 127). From what *further* is said of the female, as also of the *male* of *Th. pygmæum*, it is not possible to see what species then was intended, only that it was some *other* than *Singa trifasciata*, and *probably* a *Linyphia*. SUNDEVALL himself says later (Vet.-Akad. Handl. f. 1832, p. 252), that *Th. pygmæum* belongs to the genus *Erigone*, to which he assigns those species of his old genus *Linyphia*, which are "nigricantes, pedibus rufis, parvi, agiles, mandibulis in plerisque ovatis, femore crassioribus, apice attenuatis et divergentibus:" but these characteristics do not suit *L. pygmæa* WESTR. The only ground for assuming, that it is *this* species that SUNDEVALL confounded with *Singa trifasciata*, is the circumstance that specimens of *L. pygmæa* WESTR. are found in SUNDEVALL's collection together with specimens of *Singa trifasciata* under the name of *Ther. pygmæum*. These specimens have probably been placed in the collection *subsequently* to the composition of the description. But even supposing that SUNDEVALL did make use of these specimens while making his description of *Th. pygmæum*, it is still undeniable, that that description can only with the utmost uncertainty be referred to WESTRING's *Lin. pygmæa*; and when two different species are found preserved in a collection of types, one of which can *with perfect certainty* be recognized by the description, whereas the other is *doubtful*, it is surely to the former, and not to the latter, that the specific name is to be preserved. Accordingly, in the case before us, it is not *Lin. pygmæa* WESTR. (*L. tenebricola* REUSS), but *Singa trifasciata* C. KOCH, that is entitled to the specific name *pygmæa* SUND. — See also above, p. 26: *Singa Herii* WESTR.

(Pag. 128.) 21. **L. angulipalpis** [= *Linyphia angulipalpis* WESTR. 1851].

Syn.: 1851. LINYPHIA ANGULIPALPIS WESTR., Förteckn. etc., p. 38.

1866. BATHYPHANTES ,, MENGE, Preuss. Spinn., I, p. 119, Pl. 21, tab. 44.

This species, which is distinguished by the patellar joint of the male's palpus being drawn out into a sharp angle, is not described in BLACKWALL'S work. WESTRING was acquainted only with the male: I have also a (dried) specimen of the female, in which the abdomen, as in the male, is of a uniform dark brown colour. The vulva has the form of a large, reddish-brown, transversal area rounded in front and more truncated behind, limited by an elevated border, and bisected by a longitudinal, almost uniformly broad septum, which reaches with its rounded and deflected apex a little beyond the posterior limit of the area. The mandibles and the spines on the legs are somewhat shorter than in ♂.

(Pag. 129.) 22. **L. index** [= *Linyphia index* THOR. 1856].

Syn.: 1856. LINYPHIA INDEX THOR., Rec. crit. aran., p. 107.

WESTRING'S suspicion, that *L. index* may perhaps be identical with *Bolyphantes stramineus* C. KOCH (Die Arachn., VIII, p. 71, fig. 643) I cannot share, especially as not even the colour is the same in the two species. *L. index* has dark lateral borders to the cephalothorax, which appear to be wanting in *B. stramineus*. — MENGE'S *B. stramineus*, among the synonyms of which *L. index* has been erroneously included, is the same as *L. affinis* WESTR. or *luteola* BLACKW. On *Bol. stramineus* KOCH, *L. index* and *L. luteola*, see more above, p. 62, under the head of *L. alticeps* WESTR.

A ♂-specimen of *L. index* from Enare (Lappland) has been sent me by v. NORDMANN. Dr. L. KOCH has sent me both ♂ and ♀ (from Nürnberg) of this species, which as to the colour much resembles *L. luteola* or *affinis*, but may easily be recognized by the different armature of the metatarsi etc. In *L. luteola* the vulva shows a small obtuse process behind; in *L. index* its anterior margin appears to be drawn out into a much longer process directed backwards and curved upwards (toward the belly).

(Pag. 131.) 23. *L. decolor* [= *Linyphia decolor* WESTR. 1861].

I do not think that this species is described either in BLACKWALL or MENGE. Only one specimen has as yet been met with.

(Pag. 132.) 24. *L. nigrina* [= *Linyphia nigrina* WESTR. 1851].

Syn.: 1851. *LINYPHIA NIGRINA* WESTR., Förteckn. etc., p. 38.

1853. ,, *PULLA* BLACKW., DESC. of some newly discov. spec. of Aran.,
in Ann. and Mag. of Nat. Hist., 2 Ser., XI, p. 19.

1864. ,, ,, ID., Spid. of Gr. Brit., II, p. 234, Pl. XVI, fig. 156.

1866. *BATHYPHANTES TERRICOLUS* MENGE, Preuss. Spinn., I, p. 112, Pl. 19,
tab. 38.

The Rev. O. P. CAMBRIDGE has sent me specimens of this species under the name of *L. pulla* BLACKW., and has also declared the specimens of *L. nigrina*, which I had sent to him, identical with *L. pulla*.— In this species the cephalothorax is usually dark brown, considerably darker than the pale, red-yellowish legs, but its colour varies, and examples sometimes occur, in which the cephalothorax is of the same light colour as the extremities, only at the edges darker. The colour of the abdomen varies much: it is sometimes (both in ♂ and ♀) black or brown above, with a row of yellowish angular lines, of which the hindmost frequently coalesce to a large, on both sides dentated spot; sometimes (in ♀) it is yellowish on the upper part, with two or three angularly bent bands or marks in front, behind which follows a row of free or coalescing black spots on both sides, which rows converge to the anus. The first of the angular bands is frequently replaced by a smaller, black central spot; sometimes they are altogether absent, in which case the whole back of the abdomen is yellowish, with only a band of black spots on each side in the posterior portion. The sides and belly are black or brownish, the region in front of the vulva often lighter. The genital opening is limited by two short, brown ribs diverging backwards: from the lighter interval, behind, proceeds a fine, almost cylindrical, light yellow process directed backwards. — The *lamina bulbi* (pars digitalis or tarsalis) of the male's palpi has at its base, on the outer (superior) margin, a long, twice bent, fish-hook-like process (the accessory lamina), and the *bulbus* at its extremity a long, circularly curved, black spine.

MENGE considers this species, which I received from him under the name of *Bathypantes terricolus*, as identical with *Lin. terricola* C. KOCH. On this subject vid. sup., p. 58, *Lin. tenebricola* WESTR. — *Bathypantes zebrinus* MENGE, which MENGE had the kindness to send me, is nearly related to *L. nigrina*, but these species may be easily distinguished even by the different armature of the legs. *Bath. zebrinus* has on the thighs one spine on the first pair only, and none on the succeeding pairs, as also one spine on the metatarsi, at least those of the posterior legs. *Lin. nigrina* has three spines on the thighs of the 1st pair, and one on the thighs of the three posterior pairs of legs, but has no spine on the metatarsi.

(Pag. 134.) 25. **L. concolor** [= *Linyphia concolor* REUSS 1834].

Syn.: 1834. LINYPHIA CONCOLOR REUSS, Zool. Misc., Arachn., p. 261 (267), Taf. XVIII, fig. 3.

1836. THERIDIUM FILIPES BLACKW., Charact. of some undescr. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 484.

1856. LINYPHIA „ „ THOR., Rec. crit., p. 108.

1864. THERIDIUM „ „ BLACKW., Spid. of Gr. Brit., II, p. 206, Pl. XVI, fig. 136.

1866. STYLOPHORA CONCOLOR MENGE, Preuss. Spinn., I, p. 128, Pl. 24, tab. 51.

1867. MICRYPHANTES GRANDIMANUS OHL., Aran. d. Prov. Preuss., p. 77.

The name given by REUSS was published before BLACKWALL's, and has accordingly the right of priority. — This species is referred by BLACKWALL to the genus *Theridium*, on the ground of the form of the maxillæ and the relative lengths of the legs, but, as it seems to us, without sufficient reason. The maxillæ have the same form as in e. g. *Linyphia frenata*, which is by BLACKWALL himself referred to *Linyphia*, and they are not more inclined to the labium than those of that species: the relative length of the legs is not constant in *Theridium* BLACKW., and is also variable in *Linyphia*, at least in the compass we think it necessary to give to that genus (Conf. THOR., On Eur. Spid., p. 82 et seq.). — OHLERT's above cited synonym is perfectly certain, and rests on the comparison of specimens of both sexes, which he sent to me. — WALCKENAE (Ins. Apt., II, p. 351) inserts *Lin. concolor* REUSS among the synonyms of his *Argus graminicolens* (*Erigone graminicola* (SUND.) WESTR.), which is altogether erroneous.

(Pag. 135.) 26. *L. parvula* [= *Linyphia parvula* WESTR. 1851].

Syn.: 1851. LINYPHIA PARVULA WESTR., Förteckn. etc., p. 59.

This spider, though pretty common in Sweden, I have been unable to find among the species described by BLACKWALL and MENGE. According to CAMBRIDGE¹⁾ it is however met with in England. — The vulva is very small, black, and destitute of any projecting parts.

(Pag. 137.) 27. *L. convexa* [= *Linyphia convexa* WESTR. 1851].

Syn.: 1851. ERIGONE CONVEXA WESTR., Förteckn. etc., p. 60.

1851. „ RETICULATA ID., ibid., p. 59.

The vulva in this little species is much more distinct than in *L. parvula*, and appears (in a dried specimen) to consist of a pretty deep fovea, limited in front by an almost semicircular border, and exhibits two small reddish brown elevations behind. This species seems not to have been described either by BLACKWALL or MENGE.

(Pag. 138.) 28. *L. gracilis* [= *Linyphia variegata* (BLACKW.) 1841].

Syn.: 1841. NERIENE VARIEGATA BLACKW., The differ. in the numb. of eyes etc., p. 450.

1851. LINYPHIA GRACILIS WESTR., Förteckn. etc., p. 37.

1864. NERIENE VARIEGATA BLACKW., Spid. of Gr. Brit., II, p. 282, Pl. XIX, fig. 195.

The Rev. Mr. CAMBRIDGE has sent me a ♂ and ♀ of the *Nerienne variegata* of BLACKWALL, which, though tolerably differing from my Swedish specimens of *Lín. gracilis* WESTR. in the colour of the abdomen, with certainty belong to this species. In a ♀ of *L. gracilis* WESTR. sent to Mr. CAMBRIDGE, he also recognized *N. variegata* BLACKW. The figures (loc. cit.) of *N. variegata* show but little similitude to *L. gracilis* WESTR., but the description suits tolerably well. — BLACKWALL had already in 1841 (The differ. in the numb. of eyes, etc., p. 666) appropriated the name *gracilis* to another species of the genus *Linyphia*.

1) Descr. of twenty four new spec. of spid. lately discov. in Dorsetshire and Hampshire, together with a list of rare etc. Brit. spid., in Zoologist (1863), p. 38 (8598): "*Nerienne parvula* WESTR." This spider is not described.

The colour of this species is not quite satisfactorily described by WESTRING; the following particulars may therefore be added to his account. In ♀ the cephalothorax is brownish yellow, with black borders and a black longitudinal central line, which is triangularly enlarged in front, and does not reach fully to the eyes. The eye-area is also black. The colour of the legs is accurately described by WESTRING. The palpi are of the same colour as the legs, yellowish, with black rings, the mandibles and maxillæ also yellowish. The sternum is blackish yellow. The abdomen, which just before the oviposition is very highly arched, short, inversely ovate, but at other times more elongated, has in a peculiarly fine specimen the following marking. The upper part is black, with 4 pair of obliquely placed yellowish lines curved in the form of an S, whereof the anterior are free, the posterior united two and two at their anterior extremities: behind them, above the yellowish spinners, is a large, yellowish, almost triangular spot, with a series of (about 3) small black angular lines in the middle. The black dorsal area is in front, on both sides, bordered by a yellowish band, from which three lines or bands of the same colour go obliquely down the dark sides; beneath these bands, which are sometimes free, there are on the sides of the belly two or three yellow spots or stripes of various sizes; along the middle of the belly goes a broad, yellowish band, gradually narrower behind, and near it a fine, shorter, light line on both sides. In another specimen the oblique lines on the posterior part of the sides of the abdomen are wanting: the great yellow spot above the anus is replaced by two smaller, with a few small yellow angular lines between them: the whole underside of the belly is yellow. In an English specimen the ground-colour is much lighter, more irregularly mottled with black: a large almost †-formed blackish mark bordered by yellow longitudinal spots is seen on the upper part of the abdomen, in front. — The vulva forms a tolerably short, thick, projecting reddish-brown tubercle.

In the male, which in other respects is similar to the female, the proportion of the legs seems to be 1, 2, 4, 3. The pars patellaris and pars tibialis of the palpus are both very short, the former very convex on the anterior side, with a long, fine bristle at the apex: the clava is very large, rounded, and its diameter double that of the thigh; at its base, on the anterior side, near the tibial joint, it shows a small, coarse, truncated tooth; its colour is reddish brown; the other joints of the palpi are pale reddish yellow.

This beautiful species I have myself met with at Sättra in Westmanland and at Upsala. A specimen was also sent me by v. NORDMANN from Finnland.

Nearly related to *L. variegata* or *gracilis* WESTR. is *Bathypantes crucifer* MENGE, which however is immediately recognizable by all its metatarsi being provided with one spine, whereas in *L. variegata* they are unarmed: on the posterior metatarsi however may be seen below the middle a fine almost perpendicular hair. The spines on the legs, and the legs themselves, are shorter in *L. variegata* than in *Bath. crucifer*: on the tibiæ of the 1st pair of legs the spines are in the former species (♀) shorter than double the diameter of the joint, in the latter species longer than double that diameter, more pointed und tapering. The bristle on the male's patellar joint, which in both species is somewhat longer and coarser than the spines of the legs, is in *Bath. crucifer* serrulated on the upper margin, in *L. variegata* fine and smooth. The marking on the upper part of the abdomen in the former moreover does not exhibit the S-formed lines which distinguish my Swedish specimens of the latter species. — MENGE obligingly sent me specimens of *Bath. crucifer*, both ♂ and ♀.

(Pag. 139.) 29. *L. dorsalis* [= *Linyphia dorsalis* REUSS 1834].

Syn.: 1834. LINYPHIA DORSALIS REUSS, Zool. Misc., Arachn., p. 258 (264), Pl. XVII, fig. 12.

1841. ARGUS QUATERNUS WALCK., H. N. d. Ins. Apt., II, p. 358.

1841. LINYPHIA CLAYTONLE BLACKW., The differ. in the numb. of eyes etc., in Transact. of the Linn. Soc., XVIII, iv, p. 664.

?1845. MICRYPHANTES LAMINATUS C. KOCH, Die Arachn., XII, p. 149, Taf. CCCCXXI, fig. 1070.

1852. LINYPHIA ANTHRACINA BLACKW., A Catal. of Brit. Spid. etc., in Ann. and Mag. of Nat. Hist., 2 Sér., IX, p. 19.

1859. MICRYPHANTES VITTATUS GRUBE, Verzeichn. d. Arachn. Liv., Kur- u. Ehstl., p. 54 (463).

1864. LINYPHIA CLAYTONLE BLACKW., Spid. of Gr. Brit., II, p. 233, Pl. XVI, fig. 155.

1867. „ TERRICOLA OHL., Aran. d. Prov. Preuss., p. 46.

This species, which varies greatly in the colour of the abdomen, but is easily recognized by the peculiar form of the female's vulva, seems to us to have been with good reason identified by WESTRING with *Lin. dorsalis* REUSS, a name which has the right of priority before that given by BLACKWALL. — GRUBE's synonym is so

much the more certain, as he has had the goodness to send me a female specimen of his *Micryphantes vittatus*. OHLERT has also kindly sent me several specimens of his *Lin. terricola*. — On *L. terricola* C. KOCH vid. supra, p. 57, *L. tenebricola* WESTR. — WALCKENAER'S *Argus quaternus* cannot well be any other than *Lin. dorsalis*. — That *Micryph. laminatus* C. KOCH is a variety of this very variable species appears probable to me, not only from the description of the vulva, but also from the circumstance, that *M. laminatus* appears to have *spines* on the legs, and thus to be a *Linyphia*: at least KOCH says of it: "die oberen Knie- und Schienbeinborsten dicker und länger als gewöhnlich." See also his figure, loc. cit. *Micryph. laminatus* OHL. (Aran. d. Prov. Preuss., p. 75) is a species unknown to me. — In Germany I found *L. dorsalis* common at Travemünde.

(Pag. 141.) II. TAPINOPA [= *Tapinopa* WESTR. 1851].

Vid. THOR., On Eur. Spid., p. 81.

(Pag. 142.) 1. *T. longidens* [= *Tapinopa longidens* (REUSS) 1834].

Syn.: †1805. THERIDIUM ALVEOLUS WALCK., Tabl. d. Aran., p. 76.

1834. LINYPHIA LONGIDENS REUSS, Zool. Misc., Arachn., p. 264 (270), Pl. XVIII, fig. 5.

1836. „ TARDIPES BLACKW., Charact. of some undeser. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 488.

1851. TAPINOPA LONGIDENS WESTR., Förteckn. etc., p. 38.

1864. LINYPHIA „ BLACKW., Spid. of Gr. Brit., II, p. 227, Pl. XVI, fig. 150.

1866. TAPINOPA „ MENGE, Preuss. Spinn., I, p. 143, Pl. 27, tab. 60.

1869. LINYPHIA LITHOBIA CANESTR. et PAV., Aran. Ital., in Atti della Soc. Ital. di Scienze Nat., XI, III, p. 122.

According to WALCKENAER (Ins. Apt., II, p. 265) the spider, which he, in his Tabl. d. Aran., p. 76, has called *Theridium alveolus*, is the same as *L. longidens* REUSS; as however the species is there in no way described, the specific name *alveolus* can have no right of priority in preference to that subsequently imposed by REUSS. — *Micryphantes tessellatus* C. KOCH (Die Arachn., III, p. 86, fig. 234), which WALCKENAER includes among the synonyms of this spider, does not belong to the genus *Tapinopa*. — Prof. CANESTRINI has himself kindly sent me a specimen of his *Linyphia lithobia*.

(Pag. 144.) III. PACHYGNATHA [= *Pachygnatha* SUND. 1823].

Vid. THOR., On Eur. Spid., p. 77.

(Pag. 144.) 1. *P. Clerckii* [= *Pachygnatha Clerckii* SUND. 1823].

Syn.: 1823. PACHYGNATHA CLERCKII SUND., Specimen academ. Gen. Aran. Suec. exhibens, p. 16.

182.. THERIDIUM MAXILLOSUM HAHN, Monogr. Aran., 4, Pl. 4, fig. B.

1833. MANDUCULUS AMBIGUUS BLACKW., Charact. of some undescr. gen. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 111.

1837. PACHYGNATHA LISTERI C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 10.

1841. LINYPHIA MAXILLOSA WALCK., H. N. d. Ins. Apt., II, p. 268 (*saltem ad partem*).

1841. „ CLERCKII ID., *ibid.*, p. 270.

1864. PACHYGNATHA CLERCKII BLACKW. Spid. of Gr. Brit., II, p. 318, Pl. XXII, fig. 233.

1867. „ „ MENGE, Preuss. Spinn., I, p. 95, Pl. 16, tab. 28.

The intangled synonymism of this and the following species has been excellently unravelled both by BLACKWALL and WESTRING. Of the synonyms taken up by WALCKENAER (loc. cit., II, p. 268; IV, pp. 483, 484) under the head of *Linyphia maxillosa* and *L. Clerckii*, only HAHN's *Ther. maxillosum* and KOCH's *Pach. Listeri* really belong to this species. KOCH's *P. Clerckii* is certainly an imperfectly developed form of *P. De Geeri*, as WESTRING supposes; *P. Clerckii* OHL., of which OHLERT kindly sent me a specimen (a ♂ jun.) appears to be the young of the genuine *P. Listeri*. — SUNDEVALL's specific name is undoubtedly prior to HAHN's, which dates from the latter end of the third decennium of the present century.

The *Aranea maxillosa* of FABRICIUS (Ent. Syst., II, p. 411) is the same species as *Desis dysderoides* WALCK.¹⁾, according to SCHIÖDTE²⁾, who has examined the typical specimen of *Ar. maxillosa* FABR.

(Pag. 146.) 2. *P. Listeri* [= *Pachygnatha Listeri* SUND. 1830].

Syn.: 1830. PACHYGNATHA LISTERI SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 210.

1) Hist. Nat. d. Ins. Apt., I, p. 610.

2) Bidrag til den underjordiske Fauna (Det Kongelige Danske Videnskabernes Selskabs Skrifter, Naturvid. og Mathem. Afd., 1851, Bd II), p. 21.

Although it is perfectly certain, that *Ar. oblectrix* STRACK is identical with *Pachygnatha De Geeri* SUND., yet I have preferred the younger specific name *De Geeri*, because STRACK believed his *Ar. oblectrix* (or *obtextrix* as he also writes) to be the same as *Ar. obtextrix* BECHSTEIN, which is an error: see above under *Epeira diademata* WESTR., p. 17. I do not think it right to cashier a generally received name for another older and obsolete, if the older name only by a *mistake* has been given to the species, and properly belongs to quite another animal. — Concerning *P. Clerckii* C. KOCH, vid. sup., p. 75, under the head of *P. Clerckii* WESTR.

(Pag. 148.) IV. ERO [= *Ero* (C. KOCH) 1836].

Vid. THOR., On Eur. Spid., p. 89.

(Pag. 149.) 1. *E. variegata* [= *Ero thoracica* (REUSS) 1834].

- Syn.*: 1834. THERIDIUM THORACICUM REUSS, Zool. Misc., Arachn., p. 213 (218), Pl. XIV, fig. 11.
 1836. ERO VARIEGATA C. KOCH, in HERR.-SCHÄFF., Deutschl. Ins., 138 (Deutschl. Crust., Myriap. u. Arachn., 5), 5, 6.
 1841. THERIDIUM VARIEGATUM WALCK., H. N. d. Ins. Apt., II, p. 332.
 1841. „ CALLENS BLACKW., The differ. in the numb. of eyes, etc., p. 627.
 1841. „ VARIEGATUM ID., Spid. of Gr. Brit., II, p. 203, Pl. XIV, fig. 134.
 1866. ERO VARIEGATA MENGE, Preuss. Spinn., I, p. 147, Pl. 28, tab. 61.
 1867. „ ATOMARIA OHL., Aran. d. Prov. Preuss., p. 81.

The specific name *thoracica* REUSS has priority before *variegata* C. KOCH. The Number of Deutschlands Insekten (and Deutschl. Crustaceen, Myriapoden and Arachniden), in which that name was for the first time applied, certainly did not appear before 1835, probably at least one year later.

(Pag. 150.) 2. *E. tuberculata* [= *Ero tuberculata* (DE GEER) 1778].

- Syn.*: 1778. ARANEA TUBERCULATA DE GEER, Mém., VII, p. 226, Pl. 13, figg. 1—9.
 1802. „ APHANA WALCK., Faune Par., II, p. 206.
 1836. ERO TUBERCULATA C. KOCH, in HERR.-SCHÄFF., Deutschl. Ins., 138 (Deutschl. Crust., Myriap. u. Arachn., 5), 3, 4.

1841. THERIDIUM APHANE WALCK., H. N. d. Ins. Apt., II, p. 330.
 1845. ERO ATOMARIA C. KOCH, Die Arachn., XII, p. 106, Taf. CCCCXX,
 fig. 1033.
 1866. ,, TUBERCULATA MENGE, Preuss. Spinn., I, p. 149, Pl. 28, tab. 62.

This species certainly does *not* belong to the Fauna of Sweden. DE GEER, who was the first to describe it, had not taken the specimen he speaks of in Sweden, but at Utrecht in *Holland* (vid. DE GEER, loc. cit.). He says indeed that he subsequently in Sweden found *cocoons* similar to those of *A. tuberculata*, and that the young that came out of them appeared to him to belong to the same species as *A. tuberculata*; it is however very probable that these cocoons belonged to *Ero thoracica*, which is common in this country, whereas *E. tuberculata* has certainly never since DE GEER's time been found here.

Of his *Ero atomaria* C. KOCH himself says that "it can scarcely be considered as anything else than a variety of *E. tuberculata*" (Die Arachn., XII, p. 107). OHLERT'S *E. atomaria* (Aran. d. Prov. Preuss., p. 81), which has only *two* protuberances on the abdomen, must on the other hand be the same as *E. thoracica*. — The only specimen I possess of *E. tuberculata* (a male, which I captured at Kissingen in Bavaria, where I also met with *E. thoracica*) has *four* very distinct protuberances, of which the anterior are the larger and are considerably stronger than the corresponding protuberances in *E. thoracica*, precisely as they appear in KOCH's figure of *E. tuberculata*, Die Arachn., XII, Taf. CCCCXX, fig. 1034.

(Pag. 151.) V. THERIDIUM [= *Phyllonethis* THOR. 1869 + *Nesticus* THOR. 1869 + *Theridium* (WALCK.) 1805 + *Steatoda* (SUND.) 1833 + *Lithyphantes* THOR. 1869 + *Asa-gena* SUND. 1833 + *Euryopis* (MENGE) 1868].

On these genera vid. THOR., On Eur. Spid., pp 88—97.

(Pag. 153.) 1. *Th. lineatum* [= *Phyllonethis lineata* (CLERCK) 1757].

- Syn.: 1757. ARANEUS OVATUS CLERCK, Sv. Spindl., p. 58, Pl. 3, tab. 8.
 1757. ,, REDIMITUS ID., ibid., p. 59, Pl. 3, tab. 9.
 1757. ,, LINEATUS ID., ibid., p. 60, Pl. 3, tab. 10.
 1758. ARANEA REDIMITA LINN., Syst. Nat., Ed. 10, I, p. 621.
 ?1777. ,, MYOPA FABR., Gen. Insect., p. 249.
 1778. ,, CORONATA DE GEER, Mém., VII, p. 242, Pl. XIV, figg. 4—12.

1785. ARANEA VITTATA FOURCR., Ent. Paris., p. 534 (Cfr. VILL., Linn. Ent., IV, p. 127).
 1789. „ OVATA OLIV., Encycl. Méth., IV, p. 210.
 1789. „ LINEATA ID., ibid., p. 211.
 ?1803. „ RUBRICATA SCHRANK, Fauna Boica, III, 1, p. 240.
 1803. „ MYOPA ID., ibid., p. 241.
 1804. „ PURPURATA PANZ., Faun. Ins. Germ., 85, 22.
 1805. THERIDIUM LINEATUM WALCK.,
 1805. „ REDIMITUM ID., } Tabl. d. Aran., p. 73.
 1805. „ OVATUM ID., }
 1837. STEATODA REDIMITA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 9.
 1864. THERIDIUM LINEATUM BLACKW., Spid. of Gr. Brit., II, p. 176, Pl. XIII, fig. 111.
 1868. „ „ MENGE, Preuss. Spinn., II, p. 165, Pl. 31, tab. 72.
 1869. PHYLLONETHIS LINEATA THOR., On Eur. Spid., p. 90.

In my Rec. crit. Aran., p. 30, I have given as a reason for adopting the specific name *lineatus* to the exclusion of the contemporary *redimitus* and *ovatus*, that *A. lineatus* CLERCK is the *chief form* (forma principalis) of the species, *A. redimitus* and *A. ovatus* varieties. All individuals, when young, belong to the first mentioned form, and it is not till afterwards, that some among them assume the colour which distinguishes *A. redimitus* and *A. ovatus*. As now not only WALCKENAER, but also WESTRING, BLACKWALL and MENGE make use of the name *lineatus*, it is to be supposed that such will henceforward be the universal custom. — Concerning the genus *Phyllonethis*, vid. THOR., On Eur. Spid., p. 90.

(Pag. 154.) 2. **Th. cellulanum** [= *Nesticus cellulanus* (CLERCK) 1757].

- Syn.: 1757. ARANEUS CELLULANUS CLERCK, Sv. Spindl., p. 62, Pl. 4, tab. 12.
 1789. ARANEA CELLULANA OLIV., Encycl. Méth., IV, p. 211.
 ?1790. „ CELLULARIA MEYER, Ueb. einige Spinnen d. Göttingischen Gegend, p. 11¹⁾.
 1793. „ CELLULINUS MARTYN, Aranei, p. 28.
 1802. „ CRYPTICOLENS WALCK., Faune Par., II, p. 207.
 1804. „ CRYPTICOLA LATR., H. N. d. Crust. et d. Ins., VII, p. 230.
 1805. THERIDIUM CRYPTICOLENS WALCK., Tabl. d. Aran., p. 75.
 1834. LINYPHIA PALLIDULA BLACKW., Researches in Zool., p. 403 (sec. BLACKW., Spid. of Gr. Brit.).

1) Beside of *A. cellularia*, MEYER gives diagnoses of 8 more "new" species of spiders, of the object of which I cannot form a conjecture. One of them (*Ar. livida* MEY.) is stated to be "*maxime Araneæ diademati et aquaticæ affinis*" (!).

1841. LINYPHIA CRYPTICOLENS WALCK., H. N. d. Ins. Apt., II, p. 275.
 1841. META CELLULANA C. KOCH, Die Arachn., VIII, p. 123, Taf. CCLXXXVII,
 figg. 691, 692.
 1859. THERIDIUM CELLULANUM THOR., Om Clercks Origin.-Spindelsaml., p. 150.
 1864. LINYPHIA CRYPTICOLENS BLACKW., Spid. of Gr. Brit., II, p. 224, Pl.
 XVI, fig. 148.
 1869. NESTICUS CELLULANUS THOR., On Eur. Spid., p. 88.

When I wrote from CLERCK's original specimen, which was shrunk and injured by time, the above cited description of *Theridium cellulatum* (which has been repeated by WESTRING), I possessed no further knowledge of the spider described by WALCKENAER under the name of *Lin. crypticolens*, and by C. KOCH as *Meta cellulana* (CLERCK), and accordingly did not venture to take up these names as synonyms of CLERCK's *Ar. cellulanus*. Since that time I have in company with Dr. L. KOCH taken numerous specimens of this species at Nürnberg, and have thus been able to convince myself, that C. KOCH determined his *Meta cellulana* rightly, and that the synonyms above given really belong to the species described by CLERCK and me. — *Linyphia cellulana* SUND. (Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 109) does not belong to this species, but to *Lin. bucculenta* CLERCK: vid. sup. p. 53. — *Lin. nebulosa* SUND., which WALCKENAER inserts among the synonyms of his *Lin. crypticolens* (Ins. Apt., II, p. 278), is an entirely different species, and identical with that, which WESTRING denominated *Lin. crypticola* (see that species above, p. 54). Similarly C. KOCH has erroneously admitted *Lin. thoracica* REUSS, on which vid. supr., p. 52, among the synonyms of his *Meta cellulana*.

Mr. G. EISEN has kindly given me a fullgrown male of *Nesticus cellulanus* taken by him at Lugnäs in Westergötland: this is, as far as I know, the only instance of its having been met with in Sweden since CLERCK's time.

On the genus *Nesticus*, vid. THOR., On Eur. Spid., p. 88.

(Pag. 155.) 3. **Th. tepidariorum** [= *Theridium tepidariorum*
 C. KOCH 1841].

- Syn.: †1832. THERIDIUM LUNATUM SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.
 f. 1831, p. 52.
 1841. „ TEPIDARIORUM C. KOCH, Die Arachn., VIII, p. 75, Taf.
 CCLXXIV, figg. 647, 648.

1856. STEATODA TEPIDARIORUM THOR., Rec. crit., p. 108.
 1864. THERIDIUM „ BLACKW., Spid. of Gr. Brit., II, p. 180,
 Pl. XIII, fig. 114.

Aran. lunatus CLERCK, which SUNDEVALL (loc. cit.) and WESTRING (Förteckn. etc., p. 39) would refer to this species, is assuredly nothing else than a lighter form of the following, as both WALCKENAER and C. KOCH have supposed. (Vid. inf.).

The original country of *Th. tepidarium* is not as yet with certainty known. In the north of Europe it appears everywhere to have been imported from a warmer climate. Most of the writers who mention it (for instance, C. KOCH, BLACKWALL, SEIDEL, BÖCKH), have only found it in hothouses, not in the open air. SUNDEVALL met with it on board a ship, in which he in 1827—28 made a voyage to India; that ship had the previous year returned from Lisbon, and he accordingly concludes that the species belongs to *southern Europe*: he adds however, that it bore the tropical climate admirably for more than a year, and left an innumerable progeny (loc. cit., p. 53). C. KOCH and BLACKWALL look upon it as an originally *exotic* species, and that is also my opinion: I possess in fact several specimens of *Th. tepidarium* from S. Paolo in *Brasil*, and according to CAMBRIDGE¹⁾ it is also met with in *Ceylon*. — Here in Upsala it is only to be found in hothouses, but in Göteborg I have several times captured it in the hollows and angles of the outer house-walls in a street, Stora Hamn-gatan, where WESTRING also found it. NORDMANN also, who in Finnland saw it only in hothouses, has once met with it in the open air in the south of Russia, not far from Ekarinoslaw²⁾.

(Pag. 157.) 4. *Th. formosum* [= *Theridium formosum* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS FORMOSUS CLERCK, Sv. Spindl., p. 56, Pl. 3, tab. 6.
 1757. „ LUNATUS ID., ibid., p. 52, Pl. 3, tab. 7.
 1789. ARANEA LUNATA OLIV., Encycl. Méth., IV, p. 210.
 1789. „ FORMOSA ID., ibid.
 1802. „ SISIPHIA WALCK., Faune Par., II, p. 206.
 1805. THERIDIUM SISIPHUM ID., Tabl. d. Aran., p. 74.

1) Vid. CAMBRIDGE, Part I. of Catalogue of a collection of Ceylon Araneidea etc., in The Linnæan Society's Journal, Zool., Vol. X, p. 382.

2) NORDMANN, Erstes Verzeichn. etc., p. 18.

1841. *THERIDIUM LUNATUM* C. KOCH, Die Arachn., VIII, p. 74, Taf. CCLXXIII, fig. 645.
 1851. „ *FORMOSUM* WESTR., Förteckn. etc., p. 39.
 1856. *STEATODA LUNATA* THOR., Rec. crit., p. 28.
 1864. *THERIDIUM SISYPHUM* BLACKW., Spid. of Gr. Brit., II, p. 179, Pl. XIII, fig. 113.
 1866. *STEATODA LUNATA* MENGE, Preuss. Spinn., I, p. 150, Pl. 28, tab. 63.

Araneus lunatus CLERCK belongs in my opinion, as certainly as *A. formosus* CLERCK, to this well-known species. In my Rec. crit. (loc. cit.), where I have given my reasons for that opinion, I have also mentioned the causes, why I have preferred the specific name *lunatus* to *formosus*. As however WESTRING does not acknowledge *A. lunatus* as certainly synonymous with *A. formosus*, but rather with *Th. tepidariorum* C. KOCH, and also SUNDEVALL has described the last named spider under the name of *Th. lunatum* (CLERCK), it is perhaps best with WESTRING to adopt the, at least among Swedish arachnologists, unquestioned specific name *formosum*, whereby at any rate nobody's right of priority is violated. — WALCKENAER (Ins. Apt., II, p. 299), C. KOCH and BLACKWALL (loc. cit.) have erroneously placed SUNDEVALL'S *Ther. lunatum* among the synonyms of this instead of the preceding species. C. KOCH'S *Ther. pallidum*, which WALCKENAER has also referred to this species, is identical with *Linyphia frenata* REUSS (see that species above, p. 54), which by its maxillæ somewhat inclined to the labium approaches the genus *Theridium*. — *Th. formosum* BLACKW. 1837¹⁾ is identical with *Ther. pulchellum* WALCK.

This and the preceding species, which I had, in Rec. crit., with SUNDEVALL referred to the genus *Steatoda*, may be better assigned to *Theridium* sensu strictiori. — According to BLACKWALL, *Th. formosum* (CLERCK) is met with in North America (Canada)²⁾.

(Pag. 159.) 5. *Th. saxatile* [= *Theridium riparium* BLACKW. 1834].

Syn.: 1834. *THERIDIUM RIPARIUM* BLACKW., Researches in Zool., p. 354 (sec. BLACKW., Spid. of Gr. Brit.).

1834. „ „ id., Charact. of some undescr. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., V, p. 51.

1) Charact. of a new genus and some undescr. species of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., X, p. 101.

2) Notice of Spiders captured by POTTER in Canada, in Ann. and Mag. of Nat. Hist., XVII, p. 77.

1837. *THERIDIUM SAXATILE* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 8.
 1850. *ERO SAXATILIS* ID., *ibid.*, 5, p. 16.
 1864. *THERIDIUM RIPARIUM* BLACKW., Spid. of Gr. Brit., II, p. 182, Pl. XII,
 fig. 115.
 1868. *STEATODA SAXATILIS* MENGE, Preuss. Spinn., II, p. 153, Pl. 29, tab. 64.

BLACKWALL'S name for this spider has, as we here see, precedence of KOCH'S. — This species seems to be rare in Sweden; I have only met with it in Germany, at Travemünde.

Th. riparium approaches very near the two preceding species, *Th. tepidariorum* and *Th. formosum*, and together with them forms a separate little group within the genus *Theridium* (vid. THOR., On Eur. Spid., p. 93). It is widely separated from the species of the genus *Ero* by the form of the cephalothorax and by the absence of spines on the legs.

(Pag. 161.) 6. *Th. pictum* [= *Theridium pictum* WALCK. 1802].

- Syn.*: 1802. *ARANEA PICTA* WALCK., Faune Par., II, p. 207.
 1805. *THERIDIUM PICTUM* ID., Tabl. d. Aran., p. 74.
 1831. „ *ORNATUM* HAHN, Monogr. Aran., 6, Tab. 3, fig. C.
 1837. *STEATODA PICTA* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 9.
 1864. *THERIDIUM PICTUM* BLACKW., Spid. of Gr. Brit., II, p. 184, Pl. XIII,
 fig. 117.
 1868. *STEATODA PICTA* MENGE, Preuss. Spinn., II, p. 154, Pl. 29, tab. 65.

This species does not any more than *Phyllonethis* (*Theridium*) *lineata* etc. belong to SUNDEVALL'S *Steatoda*, on which genus vid. THOR., On Eur. Spid., p. 93. — The only Swedish locality for *Th. pictum* mentioned by WESTRING, is Qvickjock in Lappland, whence I also have received a specimen from Dr. H. WIDEGREN. But I have also several specimens of both sexes, which I have myself taken at Sättra in Westmanland. The northern specimens are perfectly similar to the German from Nürnberg, which I received from Dr. L. KOCH.

(Pag. 162.) 7. *Th. denticulatum* [= *Theridium denticulatum* WALCK. 1802].

- Syn.*: 1802. *ARANEA DENTICULATA* WALCK., Faune Par., II, p. 208.
 1805. *THERIDIUM DENTICULATUM* ID., Tabl. d. Aran., p. 74.
 1831. „ *MELANURUM* HAHN, Monogr. Aran., 6, Tab. 3, fig. A.
 1864. „ *DENTICULATUM* BLACKW., Spid. of Gr. Brit., II, p. 185,
 Pl. XIII, fig. 118.

C. KOCH was unacquainted with this species, and has erroneously referred its synonyms to his *Th. varians* (Die Arachn., XII, p. 136). HÄHN'S *Th. melanurum* appears to me however undoubtedly to belong to *Th. denticulatum*, and accordingly the species is no more absent in Germany than in Sweden, England and France. I have also found it in Italy, at Monaco.

(Pag. 164.) 8. *Th. simile* [= *Theridium simile* C. KOCH 1836].

- Syn.: 1836. THERIDIUM SIMILE C. KOCH, Die Arachn., III, p. 62, Taf. XCIV, fig. 215.
 1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 187, Pl. XIV, fig. 119.

The original specimen for WESTRING'S description, which was kindly lent to me by Prof. STÅL, agrees exactly with a specimen which I captured at Kissingen, as also with KOCH'S and BLACKWALL'S descriptions.

(Pag. 165.) 9. *Th. tinctum* [= *Theridium tinctum* WALCK. 1802].

- Syn.: 1802. ARANEA TINCTA WALCK., Faune Par., II, p. 208.
 1805. THERIDIUM TINCTUM ID., Tabl. d. Aran., p. 75.
 1832. „ „ LONGIMANUM SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 110.
 1838. „ „ IRRORATUM C. KOCH, Die Arachn., IV, p. 120, Taf. CXLI, fig. 327.
 1864. „ „ TINCTUM BLACKW., Spid. of Gr. Brit., II, p. 190, Pl. XIV, fig. 121.
 1868. STEATODA PUNCTULATA MENGE, Preuss. Spinn., II, p. 160, Pl. 30, tab. 68.

This species, which is also met with in Italy, appears to be of larger growth there than in Northern Europe. In a male which I captured at Milan, the cephalothorax is $1\frac{3}{4}$ millim. long, and the first pair of legs 15^{mm} . In other respects it does not differ from the Swedish specimens that I possess. SIMON has kindly sent me specimens from Paris under the name of *Th. tinctum* WALCK.

MENGE is mistaken in referring *Th. tinctum* WALCK. and *Th. irroratum* C. KOCH to *Th. varians* C. KOCH. Both are undoubtedly identical with MENGE'S *Steatoda punctulata* or *Th. tinctum* WESTR. — *Ther. pectitum* SUND. (loc. cit., p. 124), which is a *Dictyna*, is by WALCKENAER (Ins. Apt., II, p. 309) erroneously cited under this species.

(Pag. 167.) 10. **Th. varians** [= *Theridium varians* HAHN 1831].

- Syn.*: 1831. THERIDIUM VARIANS HAHN, Die Arachn., I, p. 93, Taf. XXII, figg. 71, 72.
 1831. „ LEUCONOTUM ID., Monogr. Aran., 6, tab. 3, fig. B.
 1864. „ VARIANS BLACKW., Spid. of Gr. Brit., II, p. 188, Pl. XIV,
 fig. 120.
 1868. STEATODA „ MENGE, Preuss. Spinn., II, p. 157, Pl. 29, tab. 64.

Of this species WESTRING was acquainted with specimens only from Skåne; it is however not uncommon in central Sweden, where I have captured many examples at Stockholm and Upsala. At Kissingen and Travemünde in Germany I have met with all the varieties described and figured by C. KOCH (Die Arachn., XII, p. 134 et seq., figg. 1056—1058), and which WALCKENAER¹⁾ has erroneously referred partly (figg. 1056, 1057) to his *Th. denticulatum*, partly (fig. 1058) to *Th. tinctum*. The ♂ described by WESTRING with a note of interrogation as being the male of this species, undoubtedly belongs to it: it is easily recognizable as ♂ of *Th. varians* by the description of the palpi and the clypeus, the height of which latter in my specimens (both German and Swedish), as well as in WESTRING's, is about equal to the length of the mandibles and of the anterior series of eyes, and therefore much higher than in other, allied species. The colour of the legs is however variable: the thighs are indeed in general dark only at the extremity, but they sometimes have as many as two broken dark rings near the middle (a ♂ specimen from Upsala). KOCH describes (loc. cit.) not only females, but also males, the legs of which were of a uniform light-yellow colour. — *Ther. denticulatum* WALCK. and *Th. melanurum* HAHN are by C. KOCH erroneously placed among the synonyms of *Th. varians* (vid. preceding page, under *Th. denticulatum* WESTR.), as also *Th. venustum* WALCK., which appears to be a separate species, unknown to me.

(Pag. 169.) 11. **Th. minimum** [= *Theridium Ohlertii* N.].

This species is entirely different from *Th. minimum* REUSS²⁾ or *Th. pallens* BLACKW.³⁾, which is very small (♀ about 2, ♂ 1 1/2 millim., cephalothorax 1/2—2/3 millim.), and of which ♀ has its cepha-

1) Hist. Nat. d. Ins. Apt., II, pp. 487, 488.

2) Zool. Misc., Arachn., p. 243 (249), Pl. XVII, fig. 2.

3) Researches in Zool., p. 357; Spid. of Gr. Brit., II, p. 194, Pl. XIV, fig. 125.

lothorax and legs of a uniform yellowish white (in ♂ the pars cephalica is much darker), whereas the spider here described by WESTRING, or *Th. Ohlertii*, as I propose to call it, is about as large as *Th. varians* or *Th. tinctum*, and has a dark longitudinal central line and dark borders on the cephalothorax, and legs with distinct brown rings. *Th. Heloisæ* [-iü] WALCK.¹⁾, which WESTRING suspects to be synonymous, is probably also a separate species. — The sternum is yellowish, with a dark margin. The abdomen is white or greyish above, with dark reticulation, and with a narrow dark central band in front, which however is sometimes represented by a narrow Δ -formed spot at the base of the abdomen; in the midst of the back may be observed 4 small white points, forming a trapezium narrower behind than in front, but of which points the 2 anterior are not always distinct. Immediately behind the posterior points, there is a dark, narrow, somewhat backward-curved transversal band, and a whitish, deeply indented band, gradually diminishing in breadth backwards, extends from that to the anus. In the incisions of this band, on both sides, a pair of short, obliquely placed dark spots are seen. Sometimes the whole design is indistinct and is represented only by the Δ -formed spot. The belly exhibits 4 small white spots round the spinners, sometimes alternating with 6 black ones. The middle of the belly is usually occupied by a large semicircular area, somewhat lighter than the grey-white sides. The vulva is large and brownish. — Prof. STÅL kindly sent me the typical specimens of WESTRING's description.

Of the real *Th. minimum* REUSS 1834 or *Th. pallens* BLACKW. 1834 — the latter name ought to be preferred as being more certain —, CAMBRIDGE has obligingly sent me specimens of both sexes. That species belongs also to the fauna of Sweden: I captured several years ago a fullgrown male of it at Upsala.

(Pag. 171.) 12. **Th. sisypium** [= *Theridium sisypium* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS SISYPHIUS CLERCK, Sv. Spindl., p. 54, Pl. 3, tab. 5.
 1758. ARANEA NOTATA LINN., Syst. Nat., Ed. 10, I, p. 621.
 1789. „ NERVOSA OLIV., Encycl. Méth., IV, p. 210.
 1803. „ SCOPULORUM SCHRANK, Fauna Boica, III, 1, p. 241.
 1805. THERIDIUM NERVOSUM WALCK., Tabl. d. Aran., p. 74.

1) Hist. Nat. d. Ins. Apt., II, p. 317.

1832. *THERIDIUM SISYPHUS* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 115.
 1856. „ *SISYPHIUM* THOR., Rec. crit., p. 29.
 1864. „ *NERVOSUM* BLACKW., Spid. of Gr. Brit., II, p. 183, Pl. XIII, fig. 116.
 1868. *STEATODA SISYPHIA* MENGE, Preuss. Spinn., II, p. 161, Pl. 30, tab. 69.

That *Aranea notata* LINN. belongs to this species, I have in my Rec. crit. (loc. cit.) endeavoured to show. WALCKENAER is of the same opinion in Ins. Apt., II, p. 302, but a little farther on, ibid. p. 485, he refers *A. notata* to his *Linyphia cincta*, a spider, which is probably not to be found in Sweden. In spite of the comparatively excellent description that LINNÉ has given of *A. notata*, it has been referred to yet more distant species, by SUNDEVALL for inst. to *Xysticus cristatus* (CLERCK), by C. KOCH to *Agræca brunnea* (BLACKW.).

(Pag. 172.) 13. *Th. bimaculatum* [= *Theridium bi-maculatum* (LINN.) 1767].

- Syn.: 1767. *ARANEA BIMACULATA* LINN., Syst. Nat., Ed. 12, I, 2, p. 1033.
 1802. „ *CAROLINA* WALCK., Faune Par., II, p. 208.
 1805. *THERIDIUM CAROLINUM* ID., Tabl. d. Aran., p. 75.
 1831. „ *DORSIGER* HAHN, Die Arachn., I, p. 82, Taf. XX, fig. 60.
 1850. *LINYPHIA BIMACULATA* C. KOCH, Uebers. d. Arachn.-Syst., 5, p. 19.
 1856. *THERIDIUM BIMACULATUM* THOR., Rec. crit., p. 94.
 1864. „ *CAROLINUM* BLACKW., Spid. of Gr. Brit., II, p. 192, Pl. XIV, fig. 123.
 1868. *NEOTTIURA BIMACULATA* MENGE, Preuss. Spinn., II, p. 163, Pl. 31, tab. 71.

Though WALCKENAER (Ins. Apt., II, p. 316) praises the accuracy of LINNÉ's description of this species, he does not restore to it its original Linnean name, but constantly calls it *Ther. carolinum*, just as he continually called the *Ar. formosus* of CLERCK *Theridium sisypum*, and the *Ar. sisypheus* of that author *Theridium nervosum*, even after he had discovered and mentioned his mistake in identifying *Ar. sisypheus* CLERCK. (See Ins. Apt., II, p. 301—303).

(Pag. 173.) 14. *Th. serratipes* [= *Asagena phalerata* (PANZ.) 1801].

- Syn.: 1801. *PHALANGIUM PHALERATUM* PANZ., Faun. Ins. Germ., 78, 21.
 1802. *ARANEA SIGNATA* WALCK., Faune Par., II, p. 209.
 1803. „ *SERRATIPES* SCHRANK, Fauna Boica, III, 1, p. 233.
 1805. *THERIDIUM SIGNATUM* WALCK., Tabl. d. Aran., p. 76.

1831. *THERIDIUM QUADRI-SIGNATUM* HAHN, Die Arachn., I, p. 80, Taf. XX, fig. 59.
 1832. *DRASSUS PHALERATUS* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 133.
 1833. *ASAGENA PHALERATA* ID., Consp. Arachn., p. 19.
 1839. „ *SERRATIPES* C. KOCH, Die Arachn., VI, p. 98, Taf. CCIV, figg. 502, 503.
 1864. *THERIDIUM SIGNATUM* BLACKW., Spid. of Gr. Brit., II, p. 205, Pl. XIV, fig. 135.
 1869. *ASAGENA SERRATIPES* MENGE, Preuss. Spinn., III, p. 256, Pl. 49, tab. 152.

PANZER's specific name has, as we here see, priority in preference both to WALCKENAER's and SCHRANK's. — It was in this spider that WESTRING first discovered that remarkable organ near the petiolum in the *males* of many Theridioidæ, viz. the *organ of stridulation*, consisting of an elevated arc round the base of the abdomen, by the friction of which against the transversely striated base of the cephalothorax a clearly audible, creaking sound is produced¹⁾. He afterwards²⁾ discovered the same organ in *Steatoda bipunctata* and *S. guttata*, as also³⁾ in *S. castanea*, *S. versuta* (*Ther. hamatum* WESTR.) and *Lithyphantes corollatus* (*Ther. albomaculatum* WESTR.). The presence of this organ appears to me evidently to prove, that *at least these* spiders, as well as the stridulating insects, possess the *power of hearing*, although we cannot in them, as in some of the latter, detect special auditory *organs*. PACKARD⁴⁾ communicates a curious notice, apparently connected with this subject, of a North American spider: "We have," says he, "a species of spider, which makes a noise somewhat resembling the purring of a cat: during the production of the sound the body makes a tremulous motion it is said."

(Pag. 175.) 15. **Th. undulatum** [= *Theridium undulatum* WESTR. 1861].

Of this species I have only seen a ♀ (jun.?), determined by WESTRING, which was obligingly lent to me by Prof. STÅL. In general appearance it approaches nearest to the genus *Lithyphantes* NOB.: in

1) Om stridulations-organet hos *Asagena serratipes*, in KRØYER's Naturhist. Tidsskrift, Bd IV (1842—1843), p. 349 et seq.

2) Bidrag till historien om Insekternas stridulations-organer, *ibid.*, 2 Række, Bd II (1847), p. 343.

3) Beskrifn. på stridul.-org. hos släktena *Pachycoris* etc., in Götheborgs Vetenskaps- o. Vitterhets-Samhälles Handlingar, Ny Tidsföljd, Hft 4, p. 53.

4) Second annual Report on the Nat. Hist. and Geol. of the State of Maine, p. 212.

its cephalothorax, which is broad in front, and its powerful mandibles it resembles the much larger *L. dispar* (DUF.) — on which vid. p. 94, under *Th. triste* WESTR. —; but in the position of the eyes it agrees with *Theridium*, though even in that it differs from the typical species of that genus, in as much as that the anterior central eyes, which are both situated on a common protuberance, are somewhat closer together than the posterior ones. The anterior series is straight, the posterior, seen from above, curved forward; the lateral eyes are contiguous, and posited on a common protuberance. The four posterior eyes are about equally distant from each other. The height of the clypeus is *not* greater than the length of the area occupied by the 4 central eyes. The 4th pair of legs is of about the same length as the 1st, $5\frac{1}{4}$ mm. in the specimen examined, whose cephalothorax is $1\frac{1}{2}$ mm. long. This species, as also *Ther. triste*, will probably at some future time be generically separated from *Theridium*. — MENGE has (Preuss. Spinn., II, p. 158) applied the specific name of this spider to another species of the genus *Theridium* (*Steatoda undulata* MENGE).

(Pag. 177.) 16. **Th. pulchellum** [= *Theridium pulchellum* WALCK. 1802].

- Syn.*: 1802. ARANEA PULCHELLA WALCK., Faune Par., II, p. 208.
 1805. THERIDIUM PULCHELLUM ID., Tabl. d. Aran., p. 75.
 1836. „ VITTATUM C. KOCH, Die Arachn., III, p. 65, Taf. XCIV, fig. 217.
 1837. „ FORMOSUM BLACKW., Char. of a new gen. and some undescr. spec. etc., in Lond. and Ed. Phil. Mag. 3 Ser., X, p. 101.
 1864. „ PULCHELLUM ID., Spid. of Gr. Brit., II, p. 191, Pl. XIV, fig. 122.
 1868. STEATODA PULCHELLA MENGE, Preuss. Spinn., II, p. 162, Pl. 30, tab. 70.

Of this in northern and central Europe common species I have specimens from Dalmatia through the kindness of Count KEYSERLING; in Italy I have myself met with it at Naples.

(Pag. 181.) 17. **Th. hamatum** [= *Steatoda versuta* (BLACKW.) 1846].

- Syn.*: 1846. THERIDIUM VERSUTUM BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., XVIII, p. 302.
 1851. „ HAMATUM WESTR., Förteckn. etc., p. 39.
 1864. „ VERSUTUM BLACKW., Spid. of Gr. Brit., II, p. 193, Pl. XIV, fig. 124.
 1867. EUCHARIA ZONATA OHL., Aran. d. Prov. Preuss., p. 40.
 1869. THERIDIUM NICOLUCCI CANESTR. et PAV., Aran. Ital., p. 119.

The species described by WESTRING as "*Th. hamatum* (Koch)" is by no means identical with C. Koch's *Phrurolithus hamatus* (Die Arachn., VI, p. 105, Taf. CCVI, figg. 597, 598). This last is of a darker colour and has *distinct rings* on its legs, which is never the case with WESTRING's *Th. hamatum*. *Phrurol. hamatus* KOCH belongs probably to the genus *Lithyphantes*, not to *Steatoda*. BLACKWALL's description and figures of *Th. versutum* perfectly suit WESTRING's species. Besides fullgrown females and younger individuals of both sexes, which I have myself taken at Göteborg, in houses, behind furniture, and in such places, in short in localities of the same kind as those where WESTRING found his specimens, I possess a fullgrown *male* from Finland given to me by NORDMANN. With this I have through the kindness of Prof. OHLERT been enabled to compare the original specimen (a male) of *Eucharhia zonata* OHL.

Ther. Nicoluccii, of which Prof. CANESTRINI has sent me a ♀-specimen, I am not able to distinguish from *Th. versutum* or *hamatum* WESTR. The joints of the legs are only slightly darker at the extremity, but for the rest the colour, as well as the form, the position of the eyes, the relative height of the clypeus and the mandibles, the form of the vulva etc., appear to me absolutely the same in *Th. Nicoluccii* and in *Steatoda versuta*. *Phrurolithus erythrocephalus* C. Koch 1839 (Die Arachn., VI, p. 109, fig. 550) is *perhaps* but a variety of this species, which varies much in the marking of its abdomen. I have myself captured, under a stone at Nice, a ♂ with the abdomen of an almost uniform brown without spots. I have also a full-grown male of a *Steatoda* from S. Paolo in *Brazil*, which appears to me to be identical with *S. versuta*: the sexual organs show no difference, but the head is a little more elevated, and the posterior row of eyes, which in the European specimens is, seen from above, straight or rather curved a little forwards, is in this specimen curved slightly backwards! WESTRING (Aran. Suec., p. 183) speaks of a ♀ taken at Göteborg in a ship that had just arrived from Brazil.

The vulva consists of a tolerably large, almost semicircular fovea, which is at the bottom, in front, divided by a low longitudinal septum; behind it is limited by a thin transversal lamina truncated (and, in a Swedish specimen, slightly notched) at the broad extremity. — As to the male's organs of copulation, see BLACKWALL, loc. cit.

On *Th. Paykullianum* WALCK., which WESTRING suspects to belong to this species, vid. p. 92 sub *Th. albo-maculatum* WESTR.

(Pag. 183.) 18. **Th. castaneum** [= *Steatoda castanea* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS CASTANEUS CLERCK, Sv. Spindl., p. 49, Pl. 3, tab. 3.
 1789. ARANEA CASTANEA OLIV., Encycl. Méth., IV, p. 210.
 1833. THERIDIUM CASTANEUM SUND., Sv. Spindl. Beskr., in Vet.-Akad.Handl.
 f. 1832, p. 263.
 1836. EUCHARIA HERA C. KOCH, in HERR.-SCHEFF., Deutschl. Ins., 134, 8, 9.
 1845. „ CASTANEA ID., Die Arachn., XII, p. 100, Taf. CCCXVIII,
 figg. 1028, 1029.
 1856. STEATODA „ THOR., Rec. crit., p. 27.
 1869. EUCHARIA „ MENGE, Preuss. Spinn., III, p. 263, Pl. 49, tab. 154.

This species seems principally to be an East-European form; it is common in many parts of eastern Sweden, but seems to be rare in the western parts, from which I have seen but one specimen (from the isle of Mjörn in Bohuslän, given me by Dr. Ax. LJUNGMAN). C. KOCH has found it in south-eastern Germany; in Prussia it is common (OHLERT); it is also met with in Finland (NORDMANN) and in the Russian Baltic provinces (GRUBE), and is common in southern Russia (NORDMANN). In France it has not been observed, unless it be the same species as *Th. Paykullianum* WALCK., which however appears to me improbable, as that spider is said to live under stones: this is not the case with *Steatoda castanea*, which I have only met with indoors. (As regards *Th. Paykullianum* vid. inf. sub *Th. albomaculatum* WESTR.). Neither is *S. castanea* mentioned by BLACKWALL or CAMBRIDGE as belonging to the fauna of Great Britain.

(Pag. 184.) 19. **Th. bipunctatum** [= *Steatoda bi-punctata* (LINN.) 1758].

- Syn.*: 1758. ARANEA BIPUNCTATA LINN., Syst. Nat., Ed. 10, I, p. 260.
 1765. " " STRØM, Beskr. ov. Norske Ins., 1 Stykke: *in* Det
 Trondhiemske Selskabs Skrifter, III, p. 432.
 1775. " " QUADRIPUNCTATA FABR., Syst. Ent., p. 434.
 1778. " " PUNCTATA DE GEER, Mém., VII, p. 255, Pl. 15, fig. 1.
 1804. " " M ALBUM PANZ., Syst. Nom., p. 244 (SCHÆFF., Ic. Ins.
 Ratish., II, Tab. CLXI, fig. 6).
 1805. THERIDIUM QUADRIPUNCTATUM WALCK., Tabl. d. Aran., p. 73.
 1836. EUCHARIA BIPUNCTATA C. KOCH, *in* HERR.-SCHÆFF., Deutschl. Ins.,
 134, 10, 11.
 1839. PHRUROLITHUS ORNATUS ID., Die Arachn., VI, p. 114, Taf. CCVIII, fig. 515.
 1856. STEATODA BIPUNCTATA THOR., Rec. crit., p. 80.
 1864. THERIDIUM QUADRIPUNCTATUM BLACKW., Spid. of Gr. Brit., II, p.
 177, Pl. XIII, fig. 112.
 1869. EUCHARIA BIPUNCTATA MENGE, Preuss. Spinn., III, p. 260, Pl. 49, tab. 153.

WESTRING considers LINNÉ's synonym as uncertain, but most assuredly without sufficient reason. In the above cited passage, LINNÉ's description of *A. bipunctata* is as follows: "*A. abdomine globoso, atro, punctis duobus excavatis. Habitat in fenestris. Rete disperso,*" all which fully agrees with the species before us. The subsequently made addition in the 2nd Ed. of the *Fauna Suecica* (p. 486): "*per thoracem et abdomen ducitur linea . . . ad anum usque sordide testacea,*" is certainly founded in error, for no spider, which LINNÉ's description with that addition suits, can be said to "*habitare in fenestris*" in this country. — Already in 1765 the species was very fully and well described by STRÖM (loc. cit.) under the appellation of "*Ar. bipunctata* LINN." — LINNÉ's *Ar. quadripunctata* is the same as *Drassus sericeus* SUND., WESTR. (*D. medius* L. KOCH), of which more hereafter.

Phrurolithus ornatus C. KOCH (loc. cit.) is without question nothing more than the young of *Steatoda bipunctata*, as has been also assumed by BLACKWALL. *Theridium thoracicum* HAHN (Die Arachn., I, p. 88, fig. 66), which WALCKENAER¹⁾ places among the synonyms of this species, as well as of his *Ther. triste* (*Lithyphantes dispar* (DUF.)), certainly belongs to neither, but is probably a species of *Erigone* or *Walckenaera* (*Micryphantes*). — *Ar. nocturna* LINN. (= *Pythonissa maculata* C. KOCH) has been erroneously taken up as a synonym of this species by C. KOCH (Die Arachn., XII, p. 99). — *St. bipunctata*, according to BLACKWALL²⁾, is also found in North America.

(Pag. 186.) 20. **Th. albomaculatum** [= *Lithyphantes corollatus* (LINN.) 1758].

- Syn.*: 1758. ARANEA COROLLATA LINN., Syst. Nat., Ed. 10, I, p. 621.
 1778. „ ALBOMACULATA DE GEER, Mém., VII, p. 257, Pl. 15, figg. 2—4.
 1789. „ MACULATA OLIV., Encycl. Méth., IV, p. 209.
 ?1804. „ ALBOLUNULATA PANZ., Syst. Nom., p. 244 (SCHÆFF., Ic. Ins. Ratisb., III, Tab. CCLV, fig. vi).
 1805. THERIDIUM MACULATUM WALCK., Tabl. d. Aran., p. 74.
 1831. „ ALBOMACULATUM HAHN, Die Arachn., I, p. 79, Taf. XX, fig. 59.
 1832. „ DISPAR SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 120 (*ad partem*: ♂).
 1836. „ ANCHORUM HAHN, Monogr. Aran., VIII, Pl. 2, fig. C.
 1837. EUCHARIA COROLLATA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 8.
 1839. PHRUROLITHUS COROLLATUS ID., Die Arachn., VI, p. 100, Taf. CCIV, figg. 504, 505.

1) Hist. Nat. d. Ins. Apt., II, pp. 290, 292.

2) Notice of Spiders captured by Potter in Canada, p. 76.

1856. *STEATODA COROLLATA* THOR., Rec. crit., p. 85.

1869. *EUCHARIA ALBOMACULATA* MENGE, Preuss. Spinn., III, p. 264, Pl. 49, t. 155.

1869. *LITHYPHANTES COROLLATUS* THOR., On Eur. Spid., p. 94.

This spider, so common in our country, seems curiously enough to be absent in England. — WESTRING doubts whether LINNÉ'S *A. corollata* be really the same as *Ar. albomaculata* DE GEER, because the former is, according to LINNÉ, to be found "in plantis," which is not the case with the latter or the species now in question. In the "*Öländska resa*," p. 126, where the original description of *Ar. corollata* occurs¹⁾, we only find that it was found "among bushes," which may very well imply, on the earth, under clods, stones, and such like, but needs not be considered as synonymous with "in plantis," which expression was, it is true, inserted in the *Syst. Nat.* (loc. cit.), but was again removed out of the *Fauna Suecica* Ed. 2, where to the older description is added: "*Tota atra*." We conceive therefore that one may with very good conscience adopt the Linnean specific name for this species, as we, together with C. KOCH, GRUBE, OHLERT and others, have done.

WALCKENAER'S *Th. Paykullianum* (Hist. Nat. d. Aranéides, 4, fig. 4; Ins. Apt., II, p. 296) is probably, as SIMON supposes, nothing more than a *Lith. corollatus*: but in that case WALCKENAER'S statement, that the 4th pair of legs in *Th. Paykullianum* is longer than the others, is incorrect. Moreover, of the synonyms given by WALCKENAER to *Th. Paykullianum*, *Th. dispar* SUND. ♂ belongs to *L. corollatus*.

On the genus *Lithyphantes*, see THOR., On Eur. Spid., p. 94.

(Pag. 188.) 21. *Th. guttatum* [= *Steatoda guttata* (REUSS) 1834].

Syn.: 1834. *THERIDIUM GUTTATUM* REUSS, Zool. Misc., Arachn., p. 235 (241), Pl. XVI, fig. 7.

1856. *STEATODA GUTTATA* THOR., Rec. crit., p. 108.

1864. *THERIDIUM GUTTATUM* BLACKW., Spid. of Gr. Brit., II, p. 200, Pl. XIV, fig. 131.

1868. *CRUSTULINA GUTTATA* MENGE, Preuss. Spinn., II, p. 168, Pl. 31, tab. 73.

(Pag. 189.) 22. *Th. triste* [= *Theridium triste* HAHN 1831].

Syn.: 1831. *THERIDIUM TRISTE* HAHN, Die Arachn., I, p. 89, Taf. XXI, fig. 67.

1856. *STEATODA TRISTIS* THOR., Rec. crit., p. 108.

1868. *EURYOPIS* ,, MENGE, Preuss. Spinn., II, p. 176, Pl. 33, tab. 79.

1) The entire description is as follows: "*Aranea abdomine ocreato, nigro, annulo ovali dorsali albo*, or a spider with a white line which was cloven on each

WALCKENAER'S *Th. triste* (Ins. Apt., II, p. 291) is an entirely different and much larger species, which, in spite of DUFOUR's protest¹⁾, I consider to be identical with *Th. dispar* DUF., of the genus *Lithyphantes* NOB.

side and included an oval, with sundry white teeth on the same inside, it was found among the bushes." Vid. LINNÉ, Öländska och Gotländska Resa, loc. cit.

1) Descr. de deux nouv. espèces d'Aran., in Ann. de la Soc. Ent. de France, 3 Sér., III (1855), pp. 12, 13. — Of a spider which I take to be the same as *Th. dispar* DUF. and *Phrurolithus lunatus* C. KOCH, I met with a couple of females under stones at Nice. It is much larger than *Th. triste* HAHN, with which it has scarcely anything else in common than a for the most part black colour. It is on the contrary nearly related to *Lith. corollatus*, from which it however may be easily distinguished by a somewhat different colour, thicker mandibles, almost parallel maxillæ etc. The following description of this species will not be out of place here: Long. corporis 10mm.; cephalothoracis 4mm.; lat. maxima cephalothoracis $3\frac{1}{4}$ mm., long. abdom. 7, lat. ejus $5\frac{3}{4}$ mm.. Cephalothorax inverse ovatus, lateribus partis thoracicæ minus fortiter rotundatis, fovea ordinaria pone centrum sita (inter coxas 2^{di} et 3^{ti} paris), parte cephalica magna, versus frontem lateribus rotundatis angustata, fronte rotundata, paullo plus 1mm. lata. Altitudo clypei dimidiam mandibulæ longitudinem æquat. Desuper visi, oculi 4 antici lineam recurvam, 4 postici lineam rectam formant; medii aream fere exacte rectangulam, vix longiorem quam latiore occupant; medii antici, tuberculo communi impositi, posticis paullo minores sunt et spatio oculi diametro majore inter se distantes. Oculi laterales spatio parvo disjuncti, non contingentes, antici eorum ab anticis mediis spatio vix minore remoti, quam quo distant hi inter se. Mandibulæ latitudine basali fere duplo longiores, ad basin crassitie femoris (latit. earum communis paullo plus $1\frac{1}{2}$ mm.), cylindrato-conicæ, versus apicem extus sub-sinuata, setis paucis longis prope apicem lateris exterioris; apice truncato, longius setoso, dente intus armato. Maxillæ magnæ, labio plus duplo longiores, ad basin angustæ, extus latæ, lateribus exterioribus leviter rotundatis, parum inclinat, lateribus interioribus ad labium sub-emarginatis et fortiter inclinat, supra labium autem sub-rectis, parallelis; apice conjunctim rotundatæ, pro se quæque oblique rotundato-truncatæ. Labium transversum, ad basin latius, lateribus leviter rotundatis, apice rotundato-truncato, in medio transverse impressum. Pedes prop. 1, 4, 2, 3, 1^{mi} paris cephalothorace 4^{plo} longiores (c:a 16mm.), 4^{ti} his $\frac{1}{2}$ mm. breviores, 2^{di} paris c:a $11\frac{1}{2}$ mm., 3^{ti} c:a $9\frac{1}{2}$ mm. longi. Femora anteriora 4mm. longa, versus medium paullo incrassata. Patella 1^{mi} paris (supra) $1\frac{3}{4}$ mm., tibia $3\frac{1}{4}$ mm.. Tibiæ posteriores apicem versus paullulo incrassatæ. Abdomen altum (c:a 5mm.), convexum, formâ ut in *L. corollato*. — Color niger, sub-piceus, hoc præsertim in femoribus ad basin. Abdomen nigrum, fascia vel linea albido-flava, recurva, semicirculata in declivitate antica, et maculis aliquot sub-triangularis ejusdem coloris, plus minus distinctis, seriem secundum medium dorsi formantibus. — The ♂ is not known to me. Whether the spider, which DUFOUR described and figured (Descr. et fig. de quelques Arachn., in Ann. d. Sciences Nat., II (1824), p. 210, Pl. 10, fig. 6) as ♂ of his *Th. dispar* (ibid., p. 209, fig. 4), really belong to that species or not, appears to me uncertain, since it is stated to have the 4th pair of legs longer than the 1st.

(Pag. 190.) 23. *Th. lætum* [= *Euryopsis læta* (WESTR.) 1861].

Syn.: 1863. THERIDIUM ARGENTATUM KEYSERL. Beschreibungen neuer Spinnen, in Verhandl. d. zool.-bot. Gesellsch. in Wien, XIII, p. 8 (376), Taf. X, figg. 12—16.

Through the kindness of Prof. STÅL I have been enabled to see a specimen of this interesting little spider, a fullgrown male from Skåne, determined by WESTRING himself. It is, like ♂ of the next following species, distinguished not only by its peculiarly formed palpi and its high clypeus, but more particularly by the unusually small parts of the mouth. The length of the mandibles is but little more than their breadth, and their diameter not much greater than that of the metatarsi; the similarly small maxillæ are of almost uniform breadth, rounded at the apex, and much inclined towards the little triangular lip. The height of the perpendicular clypeus is $2\frac{1}{2}$ or 3 times as great as the length of the mandibles, and about equal to the length of the femoral joint of the palpus, which joint is somewhat longer than the tibia of the 1st pair. The patellar joint is short, scarcely longer than its breadth; the tibial joint is also short, dilated and intimately united with the next joint to a very large, thick, oblong, oval clava, the length of which is about equal to that of the femoral joint, and its diameter almost 3 times that of the thigh of the 1st pair. At the emarginated or incised apex that clava is armed with three curved spines or teeth, two close together near its outer side, and the 3rd, which is curved towards the former, on the inner side. — As to the colour etc., see WESTRING's description, which fully suits the specimen I have examined.

KEYSERLING's description and figures of ♂ of his *Th. argentatum* (from Dalmatia) agree completely with the Swedish *Euryopsis læta* ♂.

(Pag. 192.) 24. *Th. flavomaculatum* [= *Euryopsis flavo-maculata* (C. KOCH) 1836].

Syn.: 1836. MICRYPHANTES FLAVOMACULATUS C. KOCH, Die Arachn., III, p. 67, Taf. XCV, fig. 220.

1851. THERIDIUM FLAVOMACULATUM WESTR., Förteckn. etc., p. 40.

1859. „ MULTIMACULATUM GRUBE, Verzeichn. d. Arachn. Liv-, Kur- u. Ehstl., p. 56 (470).

1864. „ FLAVOMACULATUM BLACKW., Spid. of Gr. Brit., II, p. 201, Pl. XIV, fig. 132.

1868. EURYOPSIS FLAVOMACULATA MENGE, Preuss. Spinn., II, p. 175, Pl. 33, t. 78.

In the male of this species the clypeus is double as high as the area of the 4 central eyes is long, at least double as high as the length of the very small mandibles; the clava of the palpus is (as in the preceding species) very large and thick, as long as the two first joints of the palpus together: the pars tibialis is small, almost bowl-formed, the large pars tarsalis with the bulbous ovate, obliquely truncated at the tip and there armed with two strong curved teeth, one at the inner edge, the other, somewhat smaller, more towards the outer side. — A ♀ specimen of this in Sweden rare species has been captured in Östergötland by Mr. HJ. STOLFE. Prof. GRUBE has had the great kindness to send me the typical specimen of his *Theridium multimaculatum* for examination. — *Th. flavomaculatum* LUCAS¹⁾ is an entirely different spider.

On the genus *Euryopsis* (MENGE), see THORELL, On European Spiders, p. 96.

(Pag. 193.) VI. EPISINUS [= *Episinus* WALCK. 1809].

Vid. THOR., On Eur. Spid., p. 79.

(Pag. 194.) 1. *E. truncatus* [= *Episinus truncatus* WALCK. 1809].

Syn.: 1809. EPISINUS TRUNCATUS WALCK., in LATR., Gen. Crust. et Ins., IV, p. 371.

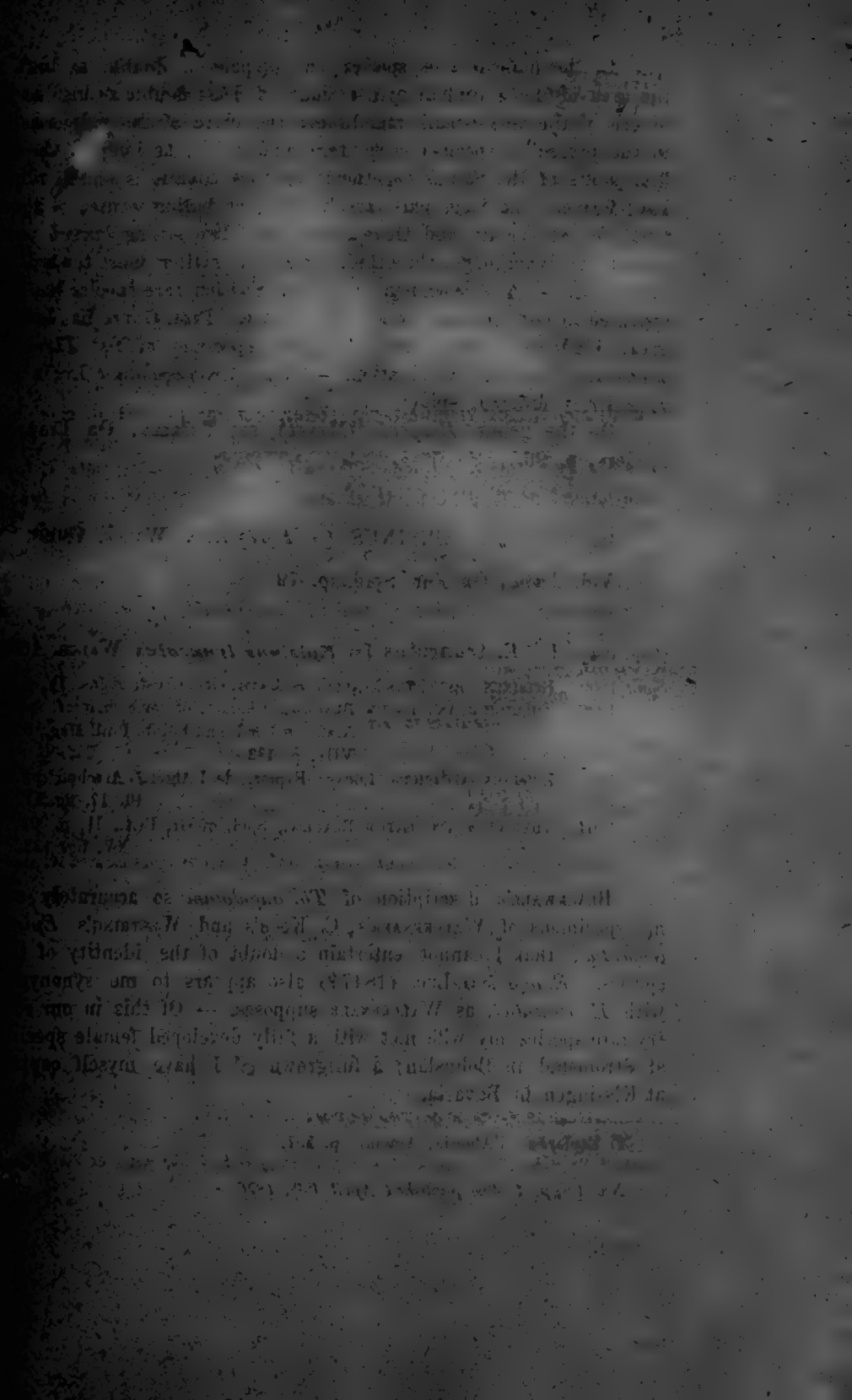
1836. THERIDIUM ANGULATUM BLACKW., Charact. of some undeser. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 483.

?184.. EPISINUS ALGIRICUS LUCAS, Explor. de l'Algér.† Arachn., p. 269, Pl. 17, fig. 11.

1864. THERIDIUM ANGULATUM BLACKW., Spid. of Gr. Brit., II, p. 202, Pl. XV, fig. 133.

BLACKWALL's description of *Th. angulatum* so accurately suits my specimens of WALCKENAER's, C. KOCH's and WESTRING's *Episinus truncatus*, that I cannot entertain a doubt of the identity of these species. *E. algiricus* LUC. (1847?) also appears to me synonymous with *E. truncatus*, as WALCKENAER supposes. — Of this in our country rare species my wife met with a fully developed female specimen at Strömstad in Bohuslän; a fullgrown ♂ I have myself captured at Kissingen in Bavaria.

1) Explor. de l'Algérie, Arachn., p. 257.





Prof. L. Agassiz
with the author's compliments

REMARKS
ON SYNONYMS
OF EUROPEAN
SPIDERS,

BY

T. THORELL.

No 2.

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(Pag. 195.) VIII. ERIGONE [= *Erigone* (SAV. et AUD.) 1825—27
+ *Pholcomma* THOR. 1869].

The study of the spiders belonging to this interesting genus has hitherto been comparatively neglected, and this neglect is no doubt to be attributed, partly to their diminutive size, and partly to the great similarity prevailing among the *females* of the different species. The descriptions, at least the older ones, are, as regards the female sex, usually such, that it is impossible from them to recognize the form intended; many a ♀ is sometimes mated with one and sometimes with another ♂; the females of many species are utterly unknown. In consequence of the imperfect knowledge we thus possess of the female sex of the genus *Erigone* WESTR., the following lists of synonyms must, unless the contrary be directly stated, be considered as applying only to the *males*, which are comparatively easily distinguishable, and in general well described or figured: I have also thought it best in my remarks concerning the characteristics, by which nearly allied species, or species that have been confounded, seem to me most easily distinguishable, to confine myself to that sex, when no especial cause required the contrary.

For the effecting of a distribution of the numerous species belonging to this group into several good and natural, smaller genera, a more complete examination of the females seems also to be indispensable. In a previous work (On Europ. Spid., p. 85—87), I had separated *Walckenaera* (BLACKW.), THOR. from *Erigone*, the former genus being nearly identical with *Micryphantes* C. KOCH, OHL., CET.; but having subsequently found that the differences which distinguish the *males* of these two genera do not always exist in the females, I have been obliged here to reunite *Walckenaera* with *Erigone*. — *E. gibba* WESTR. is the same species as *Therid. (Pholcomma) projectum* CAMBR.: v. inf. sub *E. gibba*. — With regard to other attempts that have been made to resolve *Erigone* WESTR. (= *Walckenaera* BLACKW. + *Neriene* ID. ad part.) into smaller generic groups, see "On Eur. Spid.", p. 88. MENGE'S researches (vid. his "Preussische Spinnen") will doubtless furnish good materials for a future classification of these small spiders, even if the divisions adopted by that distinguished naturalist should not in all things be accepted. To characterize genera, as has sometimes been done, exclusively by marks belonging only to one sex, the *males*, and with which nothing identical or

corresponding occurs in the other, the *females*, can, it seems to me, never lead to any good or permanent result ').

The genus *Pachydactylus* MENGE, taken up by me (On Eur. Spid., p. 86) among the synonyms of *Walckenaera* (BLACKW.), does not belong to *Erigone* (SAV. et AUD.), N., but to *Euryopsis* (MENGE), THOR.

(Pag. 197.) **E. longipalpis** [= *Erigone longipalpis* (SUND.) 1830].

Syn.: 1830. LYNPHIA LONGIPALPIS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 212; *ibid.*, 1832, p. 259 (*ad part.*, excl. salt. "Var. β ").

? 1833. ERIGONE ATRA BLACKW., Charact. of some undescr. gen. and spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 195 (*salt. ad part.*).

1841. ARGUS LONGIMANUS WALCK., H. N. d. Ins. Apt., II, p. 346 (*ad partem*).

? 1841. ,, VAGANS ID., *ibid.*, p. 345 (*ad partem*).

1864. NERIENE LONGIPALPIS BLACKW., Spid. of Gr. Brit., II, p. 274 (*ad partem*).

1) A complete reelaboration of the numerous European *Erigonæ* is at the present moment one of the chief desiderata of Arachnology. In such a work the determination of species ought to be facilitated by analytical tables, *one for the males and one for the females*, by sharp diagnoses, and by separately marking and insisting on the peculiarities, whereby each species is especially distinguished from the forms most nearly allied to it. Careful attention must be paid not only to the most conspicuous peculiarities in form, colour, size and in the sexual organs (the male's palpi and the female's vulva), but also to the profile-contour of the cephalothorax, the peculiarities of its surface (depressions and elevations, opacity or brightness, the nature or the absence of puncture or striation and hairy covering), moreover to the form of the face, particularly the height of the clypeus in comparison with the mandibles and the eye-area, to the relative lengths of the joints composing the palpi, and their form, not only in the ♂ but also in the ♀; to the arrangement, relative size and distances of the eyes, and the dimensions, form and armature of the mandibles. Equally good characteristics are frequently afforded by the form of the maxillæ, the relative length and thickness of the leg-joints, the bristles and hairy covering of the extremities, the nature of the surface of the sternum, the different consistency of the skin on the back of the abdomen, etc. etc. If to these be added *microscopical* details concerning the organs of copulation, mamillæ, claws etc., so much the better.

In the examination of specimens preserved in spirits, it is necessary, in order to observe all these particulars, to take up the animal out of the spirits and set in on the point of a fine pin, and in doing this some skill is required, to keep the specimen sufficiently dry for observation and at the same time prevent its being destroyed for want of moisture.

1867. ERIGONE DENTIPALPA OHL., Aran. d. Prov. Preuss., p. 50 (*ad partem*).
 1868. „ LONGIPALPIS MENGE, Preuss. Spinn., II, p. 196, Pl. 37,
 tab. 93.

It is difficult rightly to distribute the synonyms of this and the two following species, which have by several writers manifestly been confounded. It is probable that all three forms were already known to SUNDEVALL, and that his *Lin. longipalpis* Var. β , which is said to be *smaller* than the principal form, and to be found "in gramine", includes not only *E. dentipalpis* WESTR., but also *E. vagabunda* ID., which is at least as common in this country as either of the other two species. As regards REUSS' and C. KOCH's synonyms for the spiders in question, see the next species. WALCKENAER's *Argus vagans* — under which not only the Egyptian *Erigone vagans* SAV. et AUD., but also *Ther. dentipalpe* REUSS is cited — undoubtedly includes one or other of the three species before us; it is said also to be found in France, and I have myself seen a specimen of *E. longipalpis* WESTR. from Cherbourg. WALCKENAER indeed takes up SUNDEVALL's spider as a separate species under the name of *Argus longimanus* (loc. cit., p. 346), but only from SUNDEVALL's description. BLACKWALL at first confounded *E. dentipalpis* with *E. longipalpis*, at least when he composed the description and figure of his *Nerienne longipalpis* given in P. II of the Spid. of Gr. Brit. (which Part was not published till in 1864); but already in 1863 we find *E. dentipalpis* WESTR. taken up as a separate species both by CAMBRIDGE and BLACKWALL (vid. next following spec., *Syn.*). Under *Nerienne longipalpis* BLACKW., *E. vagabunda* is certainly included; a specimen however of "*N. longipalpis*", identified by Mr. BLACKWALL himself, and sent to me by the Rev. Mr. CAMBRIDGE, I cannot distinguish from the true *E. longipalpis* SUND., WESTR. The figures given in Spid. of Gr. Brit., Pl. XXII, fig. C, belong either to *E. longipalpis* or *E. vagabunda* (probably to the latter): Pl. XIX, fig. 188 on the other hand represents an *E. dentipalpis* WESTR.

OHLERT has united all three species under the denomination *E. dentipalpa*, as I see from the specimens that he has had the kindness to send me ¹⁾. MENGE's synonym is perfectly certain; he has also been kind enough to send me both ♂ and ♀ of his *E. longipalpis*. In MENGE's Verzeichn. Danz. Spinn., p. 71, a new species is

1) Out of six fullgrown males of "*E. dentipalpa* OHL.", 4 belonged to *E. longipalpis*, 1 to *E. vagabunda*, and 1 to *E. dentipalpis* WESTR.

mentioned (without description) as "nearly allied to *E. dentipalpa*, but with the edges of the cephalothorax armed with spines, *E. armata*", which probably is the same as *E. longipalpis*. MENGE'S *E. dentipalpis* (at least that described in Preuss. Spinn.) is in fact the same as *E. vagabunda* WESTR.; *E. dentipalpis* WESTR. he has not described.

In *E. dentipalpis* ♂ the inferior apophysis of the tibial joint of the palpus has, in the middle of its under surface, a conical, pointed tooth, with in *E. longipalpis* and *E. vagabunda* is either entirely absent or only represented by a very small tubercle. In *E. dentipalpis* the upper edge of the extremity of the tibial joint is drawn out into two short apophyses, and the joint, when viewed from above, is almost as broad as it is long: in *E. longipalpis* and *E. vagabunda* the upper edge of the apex of the joint forms but one apophysis (it is the inner of the two in *E. dentipalpis* that is absent in *E. longipalpis* and *E. vagabunda*), and the joint is more compressed at the end, and, when seen from above, considerably longer than it is broad, especially in *E. longipalpis*. In this last species the superior apophysis of the tibial joint, viewed directly from above, is triangularly pointed: in *E. vagabunda* on the contrary, when viewed from the same direction, it is broad and blunt at the apex, almost truncated. In *E. longipalpis* ♂ the trochanteral joint appears to be a little longer than in the two other species, about double as long as it is broad at the apex; it has sometimes, but not always¹⁾, a few small teeth even on the inner side, as also on the trochanters of the first pair of legs, the thighs of which are armed with a row of such spines at the base, also on the inner (anterior) side. The genital bulb, seen from the inner side, exhibits at the apex a coarse tooth directed forward and accompanied beneath by a pale, slender appendage, and behind this tooth, towards the middle, two teeth pointing downward. In *E. vagabunda* on the contrary, the bulb, seen in profile, shows at the extremity a very large tubercle directed downward

1) A close examination of a greater number of specimens of all three species — which probably have branched off from a common root within a comparatively recent period — will show that they vary a little on several important points, such as the relative length of the tibial and trochanteral joints of the palpi etc. This appears to me to prove, either that these three species have not yet attained their definitive and settled form, though they may always be easily distinguished from each other, or that they are on the point of dividing themselves into new varieties or incipient species.

and slightly impressed at the apex, and behind this another very small elevation or tubercle. The palpi of ♂ of *E. dentipalpis* and *E. vagabunda* or *atra* BLACKW. (see next page) are evidently shorter than in the case of *E. longipalpis*, which on the contrary is usually of a larger size than either of the other species. For farther particulars vid. WESTRING'S description.

Ther. longipalpe REUSS or *Argus longipalpis* WALCK. is another species, and identical with *E. longimana* C. KOCH. Vid. infr. p. 103 sub *E. longimana* WESTR.

(Pag. 199.) 2. *E. dentipalpis* [= *Erigone dentipalpis* (REUSS) 1834].

- Syn.*: †1830. LINYPHIA LONGIPALPIS SUNÐ., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 212: Var. β (*ad part.*).
 1834. THERIDIUM DENTIPALPE REUSS, Zool. Misc., Arachn., in Mus. Senck., I, p. 242 (248), Pl. XVII, fig. 1 (*saltem ad part.*).
 1841. ERIGONE DENTIPALPIS C. KOCH, Die Arachn., VIII, p. 90, Taf. CCLXXVIII, figg. 659, 660 (*saltem ad part.*).
 1851. " " WESTR., Förteckn. etc., in Göteb. Vet.- o. Vitt.-Samh. Handl., Ny Tidsf., 2, p. 40.
 1863. NERIENE " CAMBR., Descr. of 24 new spec. of Spid. etc., in Zoologist, 1863, p. 8598 (38).
 1863. " " BLACKW., Not. of a Drassus and a Neriene etc., in Ann. and Mag. of Nat. Hist., 3 Ser., XII, p. 266 (3).
 1864. " LONGIPALPIS ID., Spid. of Gr. Brit., II, p. 274 (*ad part.*: Pl. XIX, fig. 188).
 1867. ERIGONE DENTIPALPA OHL., Arau. d. Prov. Preuss., p. 50 (*ad part.*).

REUSS' description (loc. cit.) of the male's palpi appears to me to agree best with *E. dentipalpis* WESTR.; nevertheless REUSS' *Ther. dentipalpe*, as well as C. KOCH'S *E. dentipalpis*, appears also to include *E. atra* or *vagabunda*, and perhaps even *E. longipalpis*: one of these would at least seem to be indicated by the circumstance, that neither KOCH nor REUSS mentions or figures the *tooth* on the under side of the tibial joint's inferior apophysis in the ♂, which is always met with in *E. dentipalpis*, but is absent in both the allied species. The presence of that tooth in the figure in Spid. of Gr. Brit., to which we have referred in the Synonyms, shows, that BLACKWALL in that work included *E. dentipalpis* under his *Ner. longipalpis*. — WESTRING has already remarked that C. KOCH curiously enough does not mention any spine-armature on the edge of the cephalothorax of his *E. dentipalpis*.

As WESTRING was the first person who accurately distinguished and separated these species, it is best to preserve, as BLACKWALL and CAMBRIDGE have done, the specific name given by REUSS, *dentipalpis*, to the species described by WESTRING under that name, although it cannot be proved, that it was just that species and not f. inst. *E. atra* (*vagabunda*) — which MENGE calls *E. dentipalpis* — that is to be considered as indicated by REUSS' description and figure. — Mr CAMBRIDGE has communicated to me specimens of *E. dentipalpis* WESTR. under the name of *Ner. dentipalpis* BLACKW.; I have also received that species from L. KOCH under the name of *E. dentipalpis*. — See also the next preceding and following species.

(Pag. 597.) 2 bis. ***E. vagabunda*** [= *Erigone atra* (BLACKW.) 1833].

Syn.: †1830. LINYPHIA LONGIPALPIS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 212: Var. β (*ad partem*).

1833. ERIGONE ATRA BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 195 (*salt. ad partem*).

?1834. THERIDIUM DENTIPALPE REUSS, Zool. Misc., Arachn., p. 242 (248), Pl. XVII, fig. 1 (*ad partem*).

?1841. ERIGONE DENTIPALPIS C. KOCH, Die Arachn., VIII, p. 90, Taf. CCLXXVIII, figg. 659, 660 (*ad partem*).

1864. NERIE NE LONGIPALPIS BLACKW., Spid. of Gr. Brit., II, p. 274 (*ad partem*); Pl. XXII, fig. C.

1867. ERIGONE DENTIPALPA OHL., Aran. d. Prov. Preuss., p. 50 (*ad part.*).

1868. „ DENTIPALPIS MENGE, Preuss. Spinn., II, p. 198, Pl. 38, tab. 94.

Of the spider described by MENGE in his Preuss. Spinn. under the name of *E. dentipalpis*, that arachnologist has himself obligingly sent me specimens. On the synonyms of this species see the two preceding, *E. longipalpis* WESTR. and *E. dentipalpis* WESTR. ¹⁾.

(Pag. 201.) 3. ***E. nudipalpis*** [= *Erigone nudipalpis* WESTR. 1851].

Syn.: 1851. ERIGONE NUDIPALPIS WESTR., Förtekn. etc., p. 40.

1868. TMETICUS SPINIPALPIS MENGE, Preuss. Spinn., II, p. 190, Pl. 36, tab. 89 (δ ; non φ).

1) When the above articles on *E. longipalpis* WESTR. etc. were already printed, I received a letter from Mr CAMBRIDGE, in which he informs me that *E. vagabunda* WESTR. (of which, as well as of *E. longipalpis* WESTR., I had sent specimens to him) is identical with the genuine *E. atra* BLACKW. As this latter name has priority, it must be preferred to that given by WESTRING.

MENGE has kindly sent me a ♂ and a ♀ specimen of his *Tmet. spinipalpis*; the male is identical with *E. nudipalpis* ♂ WESTR., but the ♀ is not that, which I, in conformity with WESTRING, consider to belong to that ♂. — *E. serotina* C. KOCH, quoted (with a note of interrogation) by WESTRING under this large and remarkable *Erigone*, is unquestionably a separate species. Compare the description of *E. serotina* by OHLERT: Aran. d. Prov. Preuss., p. 52.

(Pag. 203.) 4. *E. inflexa* [= *Erigone inflexa* WESTR. 1861].

Of this species, well distinguished by the form of the cephalothorax, and, judging from the appearance of the females, nearly related to *E. nudipalpis*, I have only seen one ♀, the only specimen hitherto found, and which was kindly communicated to me by WESTRING. I have not been able to identify it with any species described by other writers.

(Pag. 204.) 5. *E. longimana* [= *Erigone longimana* C. KOCH 1841].

- Syn.*: †1834. NERIE NE VAGANS BLACKW., Res. in Zool., p. 374 (*sec. Sp. of Gr. Brit.*).
 †1834. THERIDIUM LONGIPALPE REUSS, Zool. Misc., Arachn., p. 222 (227), Pl. XV, fig. 7.
 1841. ARGUS LONGIPALPIS WALCK., H. N. d. Ins. Apt., II, p. 354.
 1841. ERIGONE LONGIMANA C. KOCH, Die Arachn., VIII, p. 93, Taf. CCLXXVIII, fig. 661, 662.
 1864. NERIE NE VAGANS BLACKW., Spid. of Gr. Brit., II, p. 257, Pl. XVIII, fig. 173.
 1868. TMETICUS HAMIPALPIS MENGE, Preuss. Spinn., II, p. 192, Pl. 38, tab. 95.

It appears to me to admit of no doubt, that C. KOCH's *E. longimana* is identical with the spider here described by WESTRING, or *Tmeticus hamipalpis* MENGE. The *E. longimana* of OHLERT (Aran. d. Prov. Preuss., p. 51), on the other hand, is quite a different species, having the head of the male "hochgewölbt und breit", and the sternum "stark runzelig oder höckerig" (this last mentioned peculiarity is however not found in the female, of which OHLERT presented me with a specimen) — a description which does not agree with the species treated of by WESTRING, nor with KOCH's description. The male of *E. longimana* OHL. is probably the same as *E. nigra* (BLACKW.) or *scabristernis* WESTR. (See next following species). The

spider, which OHLERT considers as the *female* to his *E. longimana*, is distinguished, among other marks, by a row of small spines on the external edge of the anterior surface of the mandibles, which spines are absent in the ♂: the edge of her cephalothorax is also said to be *sometimes* occupied by scarcely visible small spines (OHL., loc. cit.). — *Argus longimanus* WALCK. (Ins. Apt., II, p. 346) is the same as *E. longipalpis* SUND., WESTR., as we have already mentioned under that species.

The specific name *vagans* is indeed older than *longimana*, but as another *Erigone* had already received from SAVIGNY and AUDOUIN the name of *vagans*, BLACKWALL'S *Nerience vagans* ought to be called *Erigone longimana* C. KOCH.

(Pag. 206.) 6. ***E. scabristernis*** [= ***Erigone nigra*** (BLACKW.) 1834].

Syn.: 1834. NERIENE NIGRA BLACKW., Res. in Zool., p. 378 (sec. Spid. of Gr. Brit.).

1851. ERIGONE SCABRISTERNIS WESTR., Förteckn. etc., p. 40.

1864. NERIENE NIGRA BLACKW., Spid. of Gr. Brit., II, p. 271, Pl. XVIII, fig. 185.

?1867. ERIGONE LONGIMANA OHL., Aran. d. Prov. Preuss., p. 51 (♂; non ♀).

1868. DICYMBIUM GRACILIPES MENGE, Preuss. Spinn., II, p. 194, Pl. 37, tab. 92.

Although BLACKWALL in his short description says nothing of the surface of the sternum of his *Nerience nigra*, but mentions *spines* on the legs (meaning doubtless thereby fine bristles or upright hairs), I have on the strength of the description and figures in other respects exactly suiting WESTRING'S species, no hesitation in appending to that species BLACKWALL'S specific name *nigra*, under which name it has also been sent to me by CAMBRIDGE. — The fine hairs on the head of the ♂ have been overlooked by WESTRING, and in fact are sometimes worn off.

Erigone longimana ♂ OHL. probably belongs to this species, but the clypeus of ♂ of *E. nigra* (*scabristernis*) is *not*, as is said to be the case in *E. longimana* OHL., "plötzlich eingezogen" under the eyes, and the distance between the posterior central eyes is double, not equal to, the diameter of the eye. — The *female* of *E. longimana* OHL. is another species: vid. preceding article, *E. longimana* WESTR.

Of a species nearly allied to *E. nigra*, and distinguished by its incassated anterior tibiæ, *E. (Nerience) tibialis* BLACKW. 1836

(Spid. of Gr. Brit., II, p. 266) or *Dicymbium clavipes* MENGE (Preuss. Spinn., II, p. 193, Pl. 37, tab. 91), I have found a ♂ *ad.* near Stockholm. It had not previously been met with in Sweden.

(Pag. 208.) 7. *E. bicuspidata* [= *Erigone cornuta* (BLACKW.) 1833].

Syn.: 1833. NERIENE CORNUTA BLACKW., Charact. of some undescr. gen. and spec. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 190.

1851. ERIGONE BICUSPIDATA WESTR., Förteckn. etc., p. 41.

1864. NERIENE CORNUTA BLACKW., Spid. of Gr. Brit., II, p. 267, Pl. XVIII, fig. 181.

1869. DICYPHUS CILUNCULUS MENGE, Preuss. Spinn., III, p. 222, Pl. 44, tab. 122.

Micryphantes bicuspidatus C. KOCH (Die Arachn., IV, p. 138, Taf. CXLIV, figg. 338, 339), which is stated to have on its head two *hornlike* projections, each carrying one of the posterior central eyes (?), and which WESTRING, with a note of interrogation however, quotes under this species, cannot with any certainty be referred to it. MENGE refers it, though also with an interrogation, to quite a different species, *Dicypheus bicuspidatus* MENGE (Preuss. Spinn., III, p. 223, Pl. 44, tab. 123), which appears to differ from *E. bicuspidata* WESTR. or *Neriene cornuta* BLACKW. principally by the head of the ♂ not presenting, when viewed from before, any strongly marked ledge on both sides beneath the tubercles, by the central eyes not being situated on a sloping protuberance, but immediately on the vertical forehead, and by the absence, on the tibial joint of the palpus, of the long apophysis at the apex, on the inner side, which marks WESTRING'S *E. bicuspidata*. At any rate BLACKWALL'S specific name has the priority for the spider here described by WESTRING, and which is identical with MENGE'S *Dicypheus cilunculus*, of which MENGE lent me specimens to compare.

OHLERT'S description of *Micryphantes bicuspidatus* (Aran. d. Prov. Preuss., p. 57) seems to be only an extract from C. KOCH'S.

English specimens of BLACKWALL'S *Neriene cornuta* have been kindly given to me by Mr. CAMBRIDGE. — *Theridium cornutum* REUSS or *Erigone cornuta* WESTR. is quite a different species. Vid. inf. p. 109.

(Pag. 210.) 8. **E. bituberculata** [= *Erigone bituberculata* (REUSS) 1834].

- Syn.*: 1834. THERIDIUM BITUBERCULATUM REUSS, Zool. Misc., Arachn., p. 216 (222), Pl. XV, fig. 2.
 1841. ARGUS BITUBERCULATUS WALCK., H. N. d. Ins. Apt., II, p. 363.
 1851. ERIGONE BITUBERCULATA WESTR., Förteckn. etc., p. 41.
 1862. NERIENE „ CAMBR., List of new and rare Spid. etc., in Zoologist, 1862, p. 7949.
 1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 268, Pl. XVIII, fig. 182.
 1867. MICRYPHANTES BITUBERCULATUS OHL., Aran. d. Prov. Preuss., p. 54, 62.
 1868. DICYPHUS TUMIDUS MENGE, Preuss. Spinn., II, Pl. 43, tab. 121; III, p. 221.

(Pag. 213.) 9. **E. capito** [= *Erigone capito* WESTR. 1861].

Syn.: †1856. ERIGONE CUCULLATA THOR., Rec. crit. aran., p. 108.

Neither is *Lophomma capito* MENGE ¹⁾, nor *L. mitratum* ID. ²⁾, — of which forms MENGE says, "that he should consider them as one species, if only transition-forms could be found" (Preuss. Spinn., II, p. 218) — synonymous with *E. capito* WESTR. In *L. capito* MENGE the posterior, *hemispherical* eminence on the male's head is stated to adhere *with the whole of its base* to the head; in *E. capito* WESTR. that eminence has the form of an *egg divided lengthways*, and is only attached at one extremity, so that it is separated from the anterior head-eminence by a *narrow oblique fissure directed downward and backward*. It is then at least double as high as it is broad, and much narrower than the anterior eminence. In *L. mitratum*, of which I have received a specimen from Nürnberg of Dr. L. KOCH, the posterior eminence is almost *spherical*, and, when viewed from the side, rather more long than high, and almost of the same breadth as the anterior eminence. — *Micryph. capito* OHL. 1867 (Aran. d. Prov. Preuss., p. 67) is also another species, and identical with *Walcken. hiemalis* BLACKW. or *Erig. coriacea* WESTR., of which more hereafter.

In my Rec. crit., loc. cit., I erroneously introduced the spider here described by WESTRING, under the name of *E. cucullata* (C. KOCH). MENGE is undoubtedly right in identifying *Micryphantes cucullatus* C. KOCH 1836 ³⁾ with his *Lophomma cucullatum* ⁴⁾. From

1) Preuss. Spinn., II, p. 217, Pl. 43, tab. 116.

2) Ibid., p. 216, Pl. 42, tab. 115.

3) Die Arachn., III, p. 45, Taf. LXXXIX, figg. 200, 201.

4) Preuss. Spinn., II, p. 215, Pl. 42, tab. 114.

this again *Micryphantes cucullatus* OHL. ¹⁾ — which OHLERT considers to be the same species as *Argus cucullatus* WALCK. 1841 ²⁾ — is widely different. OHLERT has given me a ♂ and ♀ of this species: it is identical with *Walckenaera latifrons* CAMBR. 1863 ³⁾ and *Lophocarenum bihamatum* MENGE ⁴⁾, and ought accordingly to be called *Erigone latifrons* (CAMBR.). This species is very remarkable for the curious form of the tibial joint of the palpi in ♂: vid. MENGE's figure, loc. cit.; the details of the bulbus have been equally well figured by this author.

(Pag. 214.) 10. *E. antica* [= *Erigone antica* (REUSS) 1834].

- Syn.*: 1834. THERIDIUM ANTICUM REUSS, Zool. Misc., Arachn., p. 215 (221), Pl. XV, fig. 1.
 1836. MICRYPHANTES TIBIALIS C. KOCH, Die Arachn., III, p. 47, Taf. LXXXIX, fig. 203.
 1841. ARGUS ANTICUS WALCK., H. N. d. Ins. Apt., II, p. 357.
 1841. WALCKENAERA APICATA BLACKW., The differ. in the numb. of eyes etc., in Transact. of the Linn. Soc., XVIII, p. 637.
 1847. ARGUS APICATUS WALCK., H. N. d. Ins. Apt., IV, p. 509.
 1851. ERIGONE ANTICA WESTR., Förteckn. etc., p. 41.
 1852. WALCKENAERA ANTICA BLACKW., A Catal. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., IX, p. 465.
 1864. " " id., Spid. of Gr. Brit., II, p. 310, Pl. XXI, fig. 225.
 1867. MICRYPHANTES TIBIALIS OHL., Aran. d. Prov. Preuss., p. 54, 60.
 1868. LOPHOMMA ANTICUM MENGE, Preuss. Spinn., II, p. 213, Pl. 42, tab. 119.

C. KOCH's and OHLERT's descriptions of the ♂ of this species are faulty, in as much as that they mention only *one* appendage in front of the anterior head-eminence instead of *two*. — MENGE has described a very nearly allied species under the name of *Lophomma flavidum* (loc. cit., p. 215, Pl. 42, tab. 113), in which the posterior head-eminence, seen in profile, is convex and somewhat sloping or at least perpendicular in front, whereas in *E. antica* or *L. anticum* MENGE it there descends sharply inwards. In WESTRING's type-specimen, as well as in C. KOCH's and BLACKWALL's figures, the form of the head

1) Aran. d. Prov. Preussen, p. 53, 57.

2) H. N. d. Ins. Apt., II, p. 368.

3) Descr. of 24 new spec. etc., in Zoologist, 1863, p. 859† (34).

4) Preuss. Spinn., II, p. 200, Pl. 39, tab. 97.

eminence is as figured in MENGE's *L. anticum*. REUSS indeed was only acquainted with the *female*, but the difference of colour between *E. antica* and *E. flavida* (MENGE) — the last has *yellowish* legs with *yellowish brown* fore-tibiæ — clearly indicates, that REUSS' synonym is as certain as the others that we have admitted under *E. antica* WESTR.

(Pag. 216.) 11. *E. bicornis* [= *Erigone cristata* (BLACKW.) 1833].

- Syn.: 1833. WALCKENAERA CRISTATA BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 107.
 1834. THERIDIUM BICORNE REUSS, Zool. Misc., Arachn., p. 214 (220), Pl. XIV, fig. 12.
 1837. MICRYPHANTES CÆSPITUM C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 12.
 1841. „ „ ID., Die Arachn., VIII, p. 104, Taf. CCLXXXI, figg. 673, 674.
 1841. ARGUS BICORNIS WALCK., H. N. d. Ins. Apt., II, p. 365.
 1851. ERIGONE „ WESTR., Förteckn. etc., p. 41.
 1864. WALCKENAERA CRISTATA BLACKW., Spid. of Gr. Brit., II, p. 309, Pl. XXI, fig. 224.
 1867. MICRYPHANTES CÆSPITUM OHL., Aran. d. Prov. Preuss., p. 54, 60.
 1868. LOPHOMMA BICORNE MENGE, Preuss. Spinn., II, p. 212, Pl. 42, tab. 111.

BLACKWALL's specific name has, as we see, priority in preference to both REUSS' and C. KOCH's. — *Micryphantes punctulatus* ¹⁾ C. KOCH 1836, taken by WALCKENAER as a synonym to his *Argus bicornis*, is without doubt an entirely different species. — Of the synonyms adduced by C. KOCH under *Micryphantes cæspitum* (Die Arachn., loc. cit.), the only one really belonging to that species is, as WESTRING observes, *Ther. bicornis* REUSS: *Linyphia rufipes* SUND. (*Aran. rufipes* LINN.) is identical with C. KOCH's *Micryph. crassipalpus*. To refer, as KOCH has done, the Greenlandish *Aran. rufipes* O. FABR. (Fauna Grœnl., p. 226) to this species, is of course an entirely arbitrary proceeding.

A ♂ specimen of *Walckenaera cristata* BLACKW. from England has been kindly sent me by Mr. CAMBRIDGE. — *Theridium cristatum*

1) Not "*Micryphantes punctatus*", as WALCKENAER writes the name. Vid. Die Arachn., III, p. 12. — Another separate species is *E. (Walckenaera) punctata* BLACKW. 1841 (Spid. of Gr. Brit., II, p. 295, Pl. XX, fig. 210; Pl. XXII, fig. A): it is identical with *Microneta scrobiculata* MENGE (Preuss. Spinn., III, p. 227, Pl. 44, tab. 126), as is also *Lophomma stictocephalum* MENGE ♂ (ibid., II, p. 210, Pl. 41, tab. 108), according to specimens of both these forms with which MENGE has favoured me.

REUSS ¹⁾ is an entirely different species of the genus *Erigone*, for which I propose the name *E. perforata* ²⁾; a third species with the same specific name is *Lophomma cristatum* MENGE ³⁾, which is identical with *E. monoceros* (REUSS) WESTR.: see that species next page; a fourth is *Tmeticus cristatus* MENGE ⁴⁾, of which see *E. dentata* WESTR. farther on.

(Pag. 218.) 12. **E. cornuta** [= *Erigone acuminata* (BLACKW.) 1833].

- Syn.*: 1833. WALCKENAERA ACUMINATA BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 106.
 1834. THERIDIUM CORNUTUM REUSS, Zool. Misc., Arachn., p. 229 (235), Taf. XVI, fig. 2.
 1836. MICRYPHANTES CAMELINUS C. KOCH, Die Arachn., III, p. 11, Taf. LXXVI, figg. 168, 169.
 1841. ARGUS CORNUTUS WALCK., H. N. d. Ins. Apt., II, p. 367.
 1851. ERIGONE CORNUTA WESTR., Förteckn. etc., p. 41.
 1864. WALCKENAERA ACUMINATA BLACKW., Spid. of Gr. Brit., II, p. 289, Pl. XX, fig. 203.
 1868. PHALOPS CORNUTUS MENGE, Preuss. Spinn., II, p. 218, Pl. 43, tab. 117.

1) Zool. Misc., Arachn., p. 224 (230), Pl. XV, fig. 9.

2) The spider which I consider as identical with *Ther. cristatum* REUSS, and which I call *Erigone perforata*, is distinguished even by its remarkable colours: the cephalothorax, sternum and parts of the mouth are yellowish, the legs also yellowish, but darker towards the extremity; the cephalothorax and sternum have a narrow dark edge, and the abdomen is of a greyish black. The eyes are placed in a large black area, from which three black lines go out and unite into a blackish spot in the middle of the cephalothorax. In ♀ the thighs are yellow, the patellæ whitish yellow, the following joints dark, but with the articulations of a pale yellow tint; the black lines of the cephalothorax are slightly converging behind; in ♂ the two outer lines, if present, are angularly curved, so as to include a rhomboidal area: this area is somewhat elevated above the rest of the surface of the cephalothorax and prolonged into an almost straight, short process resting with its anterior extremity on the frontal part of the head, which is elevated into a narrow, rather high eminence. Seen in profile the pars cephalica thus shows itself to be perforated with an oblong oval hole. The species appears to be nearly related to *Phalops furcillatus* MENGE (Preuss. Spinn., III, p. 220, Pl. 43, tab. 120), but the process of the cephalothorax is not curved nor cloven at the extremity; all the eyes are placed on the black front, the 4 superior (posterior) on its more elevated, narrower portion. — Dr L. KOCH has kindly furnished me with specimens (from Nürnberg) of this interesting spider.

3) Preuss. Spinn., II, p. 211, Pl. 42, tab. 110.

4) Ibid., p. 189, Pl. 36, tab. 88.

WESTRING has favoured me with a ♂ and ♀ of this wonderfully formed spider, with which I have myself never met. The synonyms here given may all be considered as perfectly certain, not excepting even those of REUSS and WALCKENAER. BLACKWALL indeed denies, that *Ther. cornutum* REUSS is the same as *Walcken. acuminata* or *Micryphantes camelinus* C. KOCH, but, in my opinion, on insufficient grounds: REUSS was acquainted with the *female* only of this species, and his description and figures of it appear to me very well to suit the spider before us. The cephalothorax is not always of a "brownish black" colour, as BLACKWALL states; in the specimens sent me by WESTRING the cephalothorax is of a light reddish brown, as described by REUSS. As regards the form, that of the palpi included, BLACKWALL's description perfectly suits WESTRING's specimens. At any rate the species described by WESTRING and C. KOCH ought to be called *E. acuminata* BLACKW. — *Ther. acuminatum* REUSS is an entirely different species. See farther on under *E. acuminata* WESTR.

WALCKENAER is quite wrong in adducing (loc. cit.) *Linyphia alticeps* SUND. under his *Argus cornutus*. Conf. p. 59 et seq.

(Pag. 220, 598.) 13. **E. conica** [= *Erigone frontata* (BLACKW.) 1833].

- Syn.*: 1833. SAVIGNIA FRONTATA BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 105.
 1851. ERIGONE CONICA WESTR., Förteckn. etc., p. 41.
 1859. MICRYPHANTES CONIFER GRUBE, Verzeichn. d. Arachn. Liv-, Kur- u. Ehstl., in Arch. f. d. Nat.-Kunde Liv-, Ehst- u. Kurl., 2 Ser., I, p. 469 (55).
 1864. WALCKENAERA FRONTATA BLACKW., Spid. of Gr. Brit., II, p. 317, Pl. XXII, fig. 232.
 1867. MICRYPHANTES CONIFER OHL., Aran. d. Prov. Preuss., p. 54, 63.
 1868. PHALOPS CONICUS MENGE, Preuss. Spinn., II, Pl. 43, tab. 118; III, p. 219.

WESTRING's and GRUBE's names for this remarkable species must give place to the elder denomination proposed by BLACKWALL.

(Pag. 221.) 14. **E. monoceros** [= *Erigone monoceros* (REUSS) 1834].

- Syn.*: 1834. THERIDIUM MONOCEROS REUSS, Zool. Misc., Arachn., p. 230 (236), Pl. XVI, fig. 3.
 1841. ARGUS „ WALCK., H. N. d. Ins. Apt., II, p. 361.

1851. ERIGONE MONOCEROS WESTR., Förteckn. etc., p. 41.
 1864. WALCKENAERA MONOCEROS BLACKW., Spid. of Gr. Brit., II, p. 291,
 Pl. XX, fig. 205.
 1868. LOPHOMMA CRISTATUM MENGE, Preuss. Spinn., II, p. 211, Pl. 42,
 tab. 110.

REUSS' synonym for this species is not altogether certain. The projection between the four central eyes in the specimen, with which WESTRING kindly favoured me, is by no means so large as in REUSS' figure (loc. cit.), but in other respects REUSS' description and figure suit this species very well, especially as regards the *position of the eyes*. The 4 central eyes in ♂ form a long narrow rectangle; the posterior central eyes are placed uncommonly close to each other (they are almost contiguous), and the distance between the posterior lateral and the posterior central eyes is double the diameter of an eye, whereas in the nearly related *E. cuspidata* (BLACKW.) 1833 ¹⁾ the distances between the four posterior eyes are about equal. The tibial joint of the palpus, besides the large lamellar projection cloven at the apex and curved onwards, which protrudes from the upper side of the extremity of the joint, inwards, has another shorter projection on the outer side of this, in the form of a pointed spine bent downwards (which is absent in *E. cuspidata*); it has also a short and blunt, coarse process underneath. BLACKWALL's description of his *Walckenaera monoceros* agrees well with WESTRING's spider, but his figures furnish but little information.

A male specimen of *Lophomma cristatum* sent me by MENGE, shows not the least difference from WESTRING's specimen of *E. monoceros*. MENGE does not mention the conical protuberance between the eyes, on which the hair-tuft is placed.

Of another nearly allied species, *E. (Walckenaera) unicornis* CAMBR. 1861 ²⁾, which is identical with *Micryphantes stylijer* OHL. ³⁾, and, according to the *typical* specimen kindly communicated by MENGE, with *Cornicularia monoceros* MENGE ⁴⁾, and which is distinguished by the little process between the four central eyes being

1) *Walckenaera cuspidata* BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag. 3 Ser., III, p. 108; — Spid. of Gr. Brit., II, p. 290, Pl. XX, fig. 204.

2) CAMBRIDGE, Descr. of ten new spec. of Spid., in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 437 (10). See also BLACKW., Spid. of Gr. Brit., II, p. 293, Pl. XX, fig. 207.

3) Aran. d. Prov. Preuss., p. 54, 66.

4) Preuss. Spinn., III, p. 226, Pl. 44, tab. 125.

dilated and slightly cloven at the extremity, Dr E. HAGLUND has found two fullgrown males here at Upsala. It had not previously been noticed as belonging to the Swedish Fauna.

To the Fauna of Scandinavia belongs also *E. (Walcken.) Hardii* BLACKW. 1850 ¹⁾ or *Leptothrix clavipes* MENGE ²⁾, the ♂ of which, like those of *E. monoceros* and *E. cuspidata*, has a little conical process between the four central eyes, but which is one of the largest species of the genus *Erigone*, and is also distinguished by the somewhat *incrassated thighs and tibiae* of the two anterior pairs of legs. Specimens of this species have been collected by Mr. G. EISEN at Valdres in Norway, 4000 f. above the level of the sea. It has also been sent to me from Finland by AL. v. NORDMANN.

(Pag. 223.) 15. *E. gibbicollis* [= *Erigone apicata* (BLACKW.) 1850].

Syn.: 1850. NERIENE APICATA BLACKW., DESC. of some newly disc. spec. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., VI, p. 339.

1851. ERIGONE GIBBICOLLIS WESTR., Förteckn. etc., p. 41.

1859. MICRYPHANTES TUBERCULATUS GRUBE, Verzeichn. d. Arachn. Liv., Kur.- u. Ehstl., p. 469 (55) ³⁾.

1) Spid. of Gr. Brit., II, p. 292, Pl. XX, fig. 206.

2) Preuss. Spinn., III, p. 240, Pl. 47, tab. 140.

3) GRUBE also here describes, in the following terms, two new species of *Micryphantes*, *M. sulcicollis* and *M. columella*, which are unknown to me:

"Micryphantes sulcicollis GR. — Mas: Scuto dorsuali piceo, splendente, ovato, æque fornicato, parte capitali minus distincta, vertice subhemisphærico, planitie superiore posteriore pæne plana, inclinata, sulcis longitudinalibus 2, postice hiantibus, tripartita, in apice oculos posteriores medios ferente, planitie antica ardua, oculos anteriores medios ferente; his ut lateralibus sese pæne tangentibus, oculis mediis posticis inter se diametrum 1, a lateralibus pæne alterum tantum distantibus, oc. med. anticis a lateralibus diametrum fere 1, a margine frontali infero posticisque paulo magis remotis; pedibus flavis, paris 1:mi et 4:ti ceteris paulo longioribus, longitudine scuti dorsualis fere tripla, palpis flavis, clava longitudine femoris, ovata, magna usque ad patellam pedis 1:mi pertinente; maxillis ex oblongo rhomboideis, in labium inclinatis, labio perlato, humillimo, mandibulis satis prominentibus; abdomine ovali ut scuto sternali nigro, splendente, longiore et latiore quam cephalothorax. Longitudo plus $\frac{3}{4}$ lin. (mensur. rhenanæ). Femina ignota". (Loc. cit., p. 467—468).

"Micryphantes columella GR. Mas: Scuto dorsuali piceo, pæne altiore quam latum, ex conico cylindrato, latissime truncato, supra paulo excavato, parte capitali e medio marginem anticum versus adscendente, oculis circa tuberculum humile ejus collocatis, anticis mediorum 4 majoribus, tumidulis, haud margaritaceis diametrum 1 (i. e. paulo longius posticis inter se distantibus, laterales

1864. *NERIENE APICATA* BLACKW., Spid. of Gr. Brit., II, p. 269, Pl. XVIII, fig. 183.
 1867. *MICRYPHANTES GIBBUS* OHL., Aran. d. Prov. Preuss., p. 54, 65.
 1868. *PHALOPS GIBBICOLLIS* MENGE, Preuss. Spinn., II, Pl. 43, tab. 119; III, p. 220.

BLACKWALL'S *Nerience apicata* is certainly identical with WESTRING'S *E. gibbicollis*: CAMBRIDGE, to whom I have sent specimens of *E. gibbicollis*, informs me by letter that he is of the same opinion. OHLEERT has sent me this species under the name of *Micryphantes gibbus* OHL., which species MENGE first (Preuss. Spinn., II, p. 186) erroneously referred to his *Tmeticus foveolatus*, but afterwards correctly (ibid. III, p. 220) to his *Phalops gibbicollis*.

Walckenaera apicata BLACKW. is = *Erigone antica* (REUSS) WESTR. See that species above, p. 107.

(Pag. 225.) 16. *E. elevata* [= *Erigone bifrons* (BLACKW.) 1841].

- Syn.: 1841. *WALCKENAERA BIFRONS* BLACKW., The differ. in the numb. of eyes etc., p. 634.
 1847. *ARGUS BIFRONS* WALCK., H. N. d. Ins. Apt., IV, p. 510.
 1851. *ERIGONE ELEVATA* WESTR., Förteckn. etc., p. 41.
 1864. *WALCKENAERA BIFRONS* BLACKW., Spid. of Gr. Brit., II, p. 302, Pl. XXI, fig. 218.

We have in Sweden two very closely related species of spiders, both remarkably similar to *Micryphantes elevatus* C. KOCH (Die Arachn., IV, p. 133, Taf. CXLIII, figg. 334, 335), so that it might seem uncertain to which of them KOCH'S specific name ought to be assigned. In ♂ of both these species the head is elevated into a large bladderlike knop beneath which all the eyes are situated; but in the one species, that namely, for which I think the name *E. elevata* (C. KOCH) ought to be retained (= *E. elevata* THOR., Rec. crit. aran., p. 108), this knop is considerably larger, and, viewed from before,

pæne tangentibus, a posticis plus $1\frac{1}{2}$ diametros remotis; pedibus ferrugineis, articulo extremo pallidiore, paris 1. mi longioribus, longitudinem 3-plicem scuti dorsualis excedentibus, palpis clava maxima, longitudine femoris, picea vix pilosa, patella inermi, vix $\frac{1}{3}$ tantum femoris æquante, tibia picea longitudine patellæ, valde dilatæ; maxillis transversis obtuse triangulis, in labium semiovale humilimum inclinatis, mandibulis brevissimis ut ceteris oris partibus piceis: abdomine ovali ex cærulescente nigro vix piloso, punctis nigris adperso, splendore sericeo, paulo metallico. Longitudo fere $1\frac{1}{2}$ lin. Femina ignota". (*Ibid.*, p. 468).

not inconsiderably broader than the inferior row of eyes is long (Conf. KOCH's figure, loc. cit!). Viewed thus, it exhibits no longitudinal depression above (such a depression is only indicated by a darker line): KOCH also says loc. cit., p. 134, that the head in his *M. elevatus* is "not at all depressed in the middle". WESTRING does not appear to have known this species. — In the other form, the maximum breadth of the knop on the head is equal to the length of the inferior row of eyes, and the knop exhibits a longitudinal depression in the middle. To this form belongs a ♂ specimen of *E. elevata* WESTR. given me by WESTRING himself: it is unquestionably identical with BLACKWALL's *Walckenaera bifrons*, of which it is distinctly said that the knop on the head "is divided into two lobes at the summit by a longitudinal furrow", exactly as is the case with WESTRING's spider. — L. KOCH has obligingly sent me specimens of both species from the neighbourhood of Nürnberg, under the same names which I consider as those properly belonging to them.

A widely different species is *Nerienne elevata* CAMBR., which is identical with *E. retusa* WESTR. See that species farther on.

(Pag. 228.) 17. *E. Thorellii* [= *Erigone Thorellii* WESTR. 1861].

Syn.: †? 1838. *MICRYPHANTES ACUMINATUS* C. KOCH, Die Arachn., IV, p. 130, Taf. CXLIII, figg. 332, 333.

1864. *WALCKENAERA FASTIGATA* BLACKW., Spid. of Gr. Brit., II, p. 314, Pl. XXII, fig. 229.

BLACKWALL's above cited description and figures fully agree with the type-specimen of this species, an *ad.* ♂, preserved in my collection. CAMBRIDGE also, as he states in a letter, considers *E. Thorellii* WESTR. and *W. fastigata* BLACKW. synonymous. — C. KOCH says of the knop on the head of his *Micryphantes acuminatus* that "it is somewhat depressed in the middle between the posterior central eyes", which is the case in the species before us, to which I therefore, in conformity with BLACKWALL, refer it, rather than to *E. acuminata* (REUSS) WESTR., in which no such depression is found, and under which KOCH's *M. acuminatus* is cited by WESTRING and WALCKENAER. See more on the subject of both these species next page. — *Micryphantes frontalis* OHL. (Aran. d. Prov. Preuss., p. 66) appears to be a species nearly allied to *E. Thorellii*, but decidedly not identical with it.

(Pag. 229.) 18. *E. acuminata* [= *Erigone altifrons* (CAMBR.) 1863].

Syn: † 1834. *THERIDIUM ACUMINATUM* REUSS, Zool. Misc., Arachn., p. 226 (232),
Pl. XV, fig. 11.

‡ 1841. *ARGUS ACUMINATUS* WALCK., H. N. d. Ins. Apt., II, p. 370.

1863. *WALCKENAERA ALTIFRONS* CAMBR., Descr. of 24 new spec. of Spid.
etc. in Zoologist, 1863, p. 33 (8593).

The specific name *acuminata* had already been given by BLACKWALL to another species of this genus (vid. sup., p. 109, *E. cornuta* WESTR.), before it was given by REUSS to the species considered by WESTRING, no doubt correctly, as identical with the spider he has here described, and of which he has furnished me with specimens. I have also received specimens of this species from L. KOCH under the name of "*E. acuminata* WID." CAMBRIDGE's excellent description of his *Walck. altifrons* in every respect suits *E. acuminata* WESTR., specimens of which, sent to Mr CAMBRIDGE, have also been by him declared identical with *W. altifrons*.

BLACKWALL cites the *Ther. acuminatum* of REUSS (and *Argus acuminatus* WALCK.) as synonyms of his *Walckenaera fastigata* (Spid. of Gr. Brit., II, p. 314), which is widely different from *E. acuminata* WESTR. Of the face of that spider WESTRING rightly observes: "*hoc a latere viso lævissime tantum impresso*", — and REUSS' figure also indicates a *slight* impression — whereas in *W. fastigata* the anterior portion of the cephalothorax "is divided into two lobes by a deep transverse groove in front", of which "the inferior lobe is very convex", as is also evident in BLACKWALL's figure, and is the case with *E. Thorellii* WESTR., with which *W. fastigata* is decidedly identical. (Vid. preceding species). — The elevated part of the head evidently inclines a little *forwards*, in consequence of the depression below; REUSS also remarks that it is "*etwas vorwärts geneigt*".

Lophocarenum acuminatum MENGE (Preuss. Spinn., II, p. 201, Pl. 39, tab. 98), is quite another spider: it is perhaps the same as *E. semiglobosa* WESTR. (see that species p. 119), of which however I am far from certain.

From *E. crassipalpis* (MENGE), concerning which species vid. infr. p. 118, it is easy to distinguish *E. altifrons* or *acuminata* WESTR. by its head-eminence being narrower and somewhat, though not considerably, sloping behind: seen from before the breadth of this eminence immediately above the anterior row of eyes does not exceed the length of the patella of the first pair of legs the distance between the two

uppermost eyes is not greater than the diameter of an eye, and the eye-area's height (length) is greater than its breadth, etc.

That WALCKENAER's synonym belongs to this species and not to *E. Thorellii*, I will not venture decidedly to affirm; perhaps, like the names that he quotes, it includes both species.

(Pag. 231.) 19. *E. crassiceps* [= *Erigone crassiceps* WESTR. 1861].

The type-specimens of this species are preserved in my cabinet. The tibial joint of the male's palpus has on the upper edge of the apex, outwards, a fine, slender, straight process; on the inside it is drawn out into a large, convex, thin appendage, which at its base lies upon the lamina bulbi, with which it is almost equal in length; it is broad at the base, tapering and curved upward at the extremity: the apex itself is again somewhat dilated, and divided by a small, almost semicircular notch into two short teeth. The bulbus exhibits on the under-side, nearer to the extremity, a pair of fine, curved spines directed outward. The species is nearly allied to *Walckenaera humilis* BLACKW. 1841¹⁾ = *Jophocarenum globiceps* MENGE²⁾, but in *E. crassiceps* the head is more projecting; when the cephalothorax is viewed from the side, the head at the back part rises more steeply and rounded off, after which it is almost horizontal, but slightly convex, and the forehead (the area between the centre eyes) projecting, rounded-arched, not longish and almost truncated; the clypeus is much more strongly inclined backwards. Viewed from before the head is slightly and regularly convex above, not, as in *E. humilis* (BLACKW.), truncated or rather a little hollowed out in the middle. — Of *E. humilis*, which has not hitherto been recorded as Swedish, Dr. HAGLUND has captured two male specimens in Östergötland.

(Pag. 233.) 20. *E. elongata* [= *Erigone elongata* (REUSS) 1834].

Syn.: 1834. *THERIDIUM ELONGATUM* REUSS, Zool. Misc., Arachn., p. 227 (233),
Pl. XV, fig. 12.

1841. *ARGUS ELONGATUS* WALCK., H. N. d. Ins. Apt., II, p. 369.

1) The differ. in the numb. of eyes etc., p. 639; Spid. of Gr. Brit., II, n. 307, Pl. XXI, fig. 223.

2) Preuss. Spinn., II, p. 207, Pl. 40, tab. 104.

1841. *MICRYPHANTES INEQUALIS* C. KOCH, Die Arachn., VIII, p. 103, Taf.

CCLXXXI, figg. 671, 672.

1867. " " OHL., Die Aran. d. Prov. Preuss., p. 54, 58.

?1868. *LOPHOCARENUM DICHOLOPHUM* MENGE, Preuss. Spinn., II, p. 206,
Pl. 40, tab 103.

If *M. galeatus* C. KOCH 1833¹) is the same as *M. inæqualis* ID., as WALCKENAER thinks (loc. cit.), the former specific name would have priority; but I have not myself had the opportunity of consulting the Number of HERRICH-SCHÆFFER's "Deutschl. Insekten", where *M. galeatus* is described and figured, and Dr. L. KOCH writes me that *M. galeatus* is a very doubtful species, which he cannot with any certainty identify; I have therefore thought it best to retain the name used by WESTRING. As C. KOCH has not mentioned his *M. galeatus* in "Die Arachniden", it seems very probable that he did not himself know to which of his species there described it ought to be referred.

It appears to me perfectly certain, that the species here described by WESTRING is identical with *Ther. elongatum* REUSS. The size of that spider is indeed stated to be "1½ Linie", but the same size is assigned e. g. to "*Ther. acuminatum*"; and generally speaking REUSS is not particularly accurate in his measurements. In other respects REUSS' description agrees with WESTRING's spider, of which I have received specimens from WESTRING himself, as well as from Dr. OHLERT, the latter specimens under the name of *Micryph. inæqualis* OHL. The identity of *M. inæqualis* C. KOCH with WESTRING's and OHLERT's species here described there can be no reason to doubt: the colour varies somewhat, and the cephalothorax is sometimes dark brown or rusty brown, sometimes olive-coloured, the legs rusty- or earthy-yellow, the abdomen brown or black. — *Walckenaera ludicra* CAMBR.²) is another, but nearly allied species, of which CAMBRIDGE presented me with specimens: it is recognizable not only by its unusual (yellow) colour, but also by the elevated portion of the head being considerably larger than in *E. elongata*: in the front-view that eminence, where the posterior central eyes are posited, is visibly broader than the anterior row of eyes is long, whereas in *E. elongata* that breadth is somewhat less than the length of the anterior row of eyes. (Compare KOCH's figure loc. cit.).

1) HERR-SCHÆFF., Deutschl. Ins., 121, 23.

2) Descr. of ten new spec. of Spid. etc., in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 438 (11); BLACKW., Spid. of Gr. Brit., II, Pl. 316, Pl. XXII, fig. 231.

Lophocarenum elongatum MENGE, in which, as MENGE's figures show, the head is much lower than in *E. elongata* WESTR., is a different species, and the same as *E. parallela* (REUSS), concerning which species vid. infr. sub. *E. parallela* WESTR.

Lophocarenum dicholophum MENGE. on the contrary, is probably identical with *E. elongata* WESTR.: the description and figures of the male's cephalothorax and palpi perfectly suit *E. elongata*, only the patellar joint is said to be *as long* as the patella of the first pair of legs, whereas in *E. elongata* it is much *longer*. MENGE unfortunately says too little of the nature of the surface of the cephalothorax, which in *E. elongata* is distinguished by *impressed points ordered in radiating rows*. The skin of the back of the abdomen is of a firm consistency, with large impressed points; the patellar joint of the palpus of ♂ is almost as long as the femoral joint, and half as long again as the patellar joint of the first pair of legs, somewhat thickened at the extremity; the tibial joint is much narrower at the base, not half so long as the patellar joint: its extremity is at the end, above, produced into a very long, fine, pointed spine strongly curved outward and also upward, and, a little beneath this, dilated on the outer side into a short, blunt process.

Lophocarenum crassipalpe MENGE¹⁾ is pretty nearly related to *E. elongata*. The cephalothorax however in *L. crassipalpis* MENGE, as in *E. altifrons* or *acuminata* WESTR., is destitute of rows of impressed points. The elevated portion of the head of ♂ is almost *vertical*, not, as in *E. elongata*, inclined backwards, the cephalothorax very finely chagrined and bright, the skin on the back of the abdomen marked with fine impressed points. The patellar joint of the palpus is little more than half as long as the femoral joint, cylindrical, only a little longer than the patella of the first pair of legs; the tibial joint, narrow at the base and very short, is at its apex, above, drawn out into two processes separated by a rounded notch, of which the interior is long, pointed and somewhat curved outward, the exterior is shorter and terminates in a fine point. Of this species, which had not previously been met with in Sweden, Dr HAGLUND has captured a ♂ *ad.* at Upsala. MENGE's statement, that the head has no side-foveæ, is erroneous; for not only is the above-mentioned Swedish specimen furnished with these foveæ, but so also is a specimen, which MENGE himself had the kindness to send me from Danzig.

1) Preuss., Spinn., II, p. 208, Pl. 41, tab. 105.

(Pag. 235) 21. *E. semiglobosa* [= *Erigone semiglobosa* WESTR. 1861].

The clava of the male's palpus exhibits at the base, on the under side, outwards, a strong spur bent downwards; the tibial joint is on its outer side furnished with some coarse hairs pointing outwards; above, its extremity is drawn out into a broad, lamellar projection which, before it attains half the length of the lamina, bends outwards and terminates in a long, strong spine or slender tooth directed outward and somewhat forwards: a little nearer its base projects another such tooth, parallel with and a little shorter than the former: the ends of these teeth are easily seen when the palpus is viewed from below, when one at the same time sees one or two smaller darker teeth on the inner side of the bulbus, near its extremity, and a circularly curved spine under that extremity.

The English arachnologists have not described this species, as I have been informed by Mr. CAMBRIDGE, to whom I have sent specimens of it. — *Lophocarenum acuminatum* MENGE ¹⁾ belongs perhaps to *E. semiglobosa*, but this is by no means a sure synonym.

Lophocarenum erythropus MENGE ²⁾ — which is identical with *Neriene picina* BLACKW. ³⁾, according to specimens sent me by MENGE and CAMBRIDGE — is very like *E. semiglobosa*: the profile of the cephalothorax is almost exactly similar, but the face in *E. semiglobosa* is higher and narrower, and the distance between the anterior lateral eyes and the edge of the clypeus considerably greater, not, as in *Erig. picina* (BLACKW.), equal to or perhaps a little less than, the distance between the anterior side-eyes and the posterior central eyes. — A male specimen of *E. picina* (BLACKW.) has been captured at Ronneby by Mr. G. EISEN. It had not formerly been observed in Sweden.

(Pag. 237.) 22. *E. erythropus* [= *Erigone erythropus* WESTR. 1851].

Syn: 1851. ERIGONE ERYTHROPUS WESTR., Förteckn. etc., p. 42.

1862. WALCKENAERA BOREALIS CAMBR., Descr. of ten new spec. etc., in Zoologist, 1862, p. 7697.

1) Preuss. Spinn., II, p. 201, Pl. 39, tab. 98.

2) Ibid., p. 203, Pl. 40, tab. 100.

3) The differ. in the number of eyes etc., p. 640; Spid. of Gr. Brit., II, p. 313, Pl. XXI, fig. 228.

The ♂ of this species differs from *E. semiglobosa* WESTR., as also from *E. picina* (BLACKW.) or *Lophocarenum erythropus* MENGE, by the elevated part of the head being longer, *about double as long as it is high, flattened*, not high and arched. The anterior central eyes are posited *in the midst* of the face, i. e. as far from the top of the head as from the edge of the clypeus — not, as in *E. semiglobosa*, visibly higher than the middle of the face; the forehead (the area above the anterior central eyes) is covered with *hair*, which gives it a rugous appearance, whereas in *E. semiglobosa* the forehead is smooth and shining. The extremity of the tibial joint of the palpus of ♂ is above drawn out into a long, lamellar, somewhat tapering projection, which is strongly and almost at right angles curved outwards: its slender apex is somewhat notched; at its exterior side, near the middle, is seen a strong process directed outwards and almost parallel with the extremity of the lamellar projection.

A specimen of *Walcken. borealis* kindly sent me by CAMBRIDGE, differs from Swedish specimens of *E. erythropus* by its head being slightly higher in front, and its upper surface thus a little sloping, not quite as horizontal as in the Swedish specimens; but I cannot discover any other difference, and do not consider this to be of specific significance. — As regards *Lophocarenum erythropus* MENGE, see also preced. spec.

(Pag. 239.) 23. *E. pusilla* [= *Erigone pusilla* (REUSS) 1834].

- Syn.*: 1834. THERIDIUM PUSILLUM REUSS, Zool. Misc., Arachn., p. 237 (243), Pl. XVI, fig. 9.
 1838. MICRYPHANTES OCHROPUS C. KOCH, Die Arachn., IV, p. 136, Taf. CXLIV, figg. 336, 337.
 1851. ERIGONE PUSILLA WESTR., Förteckn. etc., p. 42.
 1863. WALCKENAERA MINIMA CAMBR., Descr. of 24 new. spec. etc., p. 8595 (35).
 1867. MICRYPHANTES OCHROPUS OHL., Aran. d. Prov. Preuss., p. 54, 61.
 1868. LOPHOCARENUM APICULATUM MENGE, Preuss. Spinn., II, p. 204, Pl. 40, tab. 101¹⁾; Pl. 41, tab. 107.
 1868. „ PUSILLUM ID., ibid., Pl. 41, tab. 107 (*explic. tabulae*).

Of this species I have a ♂ *ad.* determined by WESTRING himself: it agrees fully with *Micryph. ochropus* OHL. and *Walck. minima*

1) "*L. aciculatum*" in the explication of this plate is evidently a misprint or lapsus calami for "*L. apiculatum*".

CAMBR., which, as appears from specimens sent me by OHLERT and CAMBRIDGE, are identical. MENGE's synonyms are certain, although the fovea on either side of the head-eminence of the ♂ has escaped his observation: these foveæ are clearly visible in all the specimens that I possess, among which is a *Lophoc. apiculatum* kindly presented to me by MENGE himself. — The extremity of the tibial joint of the male's palpi is above drawn out into a broad process, which on its outer side, at the base, has a coarse, broad tooth; towards the apex it is slender and curved outwards, and immediately under the apex itself projects a bristle or fine spine directed forwards and outwards: the bulbus exhibits on its outer side a very long, spirally curved, coarse bristle or spine.

REUSS' synonym appears to me tolerably sure, and I have therefore followed WESTRING in preserving the specific name *pusilla*. I have also received specimens of this species from L. KOCH under the name of "*E. pusilla* WID." — MENGE classes C. KOCH's *Micryphantes ochropus* under a quite different species, *Microneta ochropus* MENGE¹), of which he kindly presented me with a ♂ *ad.*, and which, both as regards the size and form of the cephalothorax, differs greatly from KOCH's description and figure. This *M. ochropus* MENGE is identical with *Neriene innotabilis* CAMBR. 1863²).

(Pag. 241.) 24. *E. parallela* [*Erigone Reussii* N.].

Theridium parallelum REUSS³) cannot be the spider here described by WESTRING. Not only is the head in REUSS' figure considerably *higher* than in WESTRING's species, but the palpal clava, which in *Ther. parallelum* REUSS is stated to be "*small* and insignificant", is in *E. parallela* WESTR. quite unusually *large*, with a diameter three times as great as that of the thigh, or about as great as the breadth of the whole clypeus. I therefore could not preserve the name *parallela* for this species, but have assigned it a new, *Reussii*. The specific name given by REUSS is, no doubt rightly, claimed by BLACKWALL for another species, *Walckenaera parallela* BLACKW.⁴), which is identical with *Lophocarenum elongatum* MENGE⁵). In this *E. paral-*

1) Preuss. Spinn., III, p. 228, Pl. 44, tab. 127.

2) Descr. of 24 new spec. of spid., in *Zoologist*, 1863, p. 8582 (22).

3) Zool. Misc., Arachn., p. 228 (234), Pl. XVI, fig. 1.

4) Spid. of Gr. Brit., II, p. 296, Pl. XX, fig. 211.

5) Preuss. Spinn., II, p. 209, Pl. 41, tab. 106.

lela (REUSS), BLACKW., of which I have been provided with specimens through the kindness of CAMBRIDGE and MENGE, the short tibial joint is at its extremity, above, drawn out into a long, straight spine pointing forwards and somewhat upwards; the palpal clava, the diameter of which is less than double that of the thigh, has a small, short, blunt, brown appendage at the base, outwards, and in the middle, at the inner edge, exhibits a crooked, brown spine directed upward and somewhat backward, and a longer, finer, corkscrew-formed, black spine under the extremity.

The extremity of the very short and broad tibial joint in *E. Reussii* n. ♂ has near its outer side, above, a very fine, long spine directed transversely inwards; the lamina shows at the base, inwards, a transversal depression and a large, irregularly bilobated excision stretching from the base forwards(?); it is, with the large and very complicated bulbus, double as long as the two preceding joints together, and at least as long as the femoral joint. — A very peculiar characteristic of *E. Reussii* is the uncommon form of the anterior tarsi in ♂, which are *incrassated in the middle*, on the upper side. Vid. WESTRING's description. — I should have supposed *Micryph. punctulatus* C. KOCH (Die Arachn., III, p. 12, Taf. LXXXVI, fig. 170), to be identical with *E. Reussii*, if KOCH had not said of *M. punctulatus* — a *female* — that the head was "projecting and somewhat high", which is by no means the case with ♀ of *E. Reussii*.

(Pag. 243.) 25. *E. coriacea* [= *Erigone hiemalis* (BLACKW.) 1841].

Syn.: 1841. WALCKENAERA HIEMALIS BLACKW., The differ. in the numb. of eyes etc., p. 632.

1851. ERIGONE CORIACEA WESTR., Förteckn. etc., p. 59.

1864. WALCKENAERA HIEMALIS BLACKW., Spid. of Gr. Brit., II, p. 302, Pl. XXI, fig. 217.

1867. MICRYPHANTES CAPITO OHL., Aran. d. Prov. Preuss., p. 55, 67.

1868. LOPHOCARENUM PARVULUM MENGE, Preuss. Spinn., II, p. 202, Pl. 39, tab. 99.

In this species the male's clava is oviform, pointed, strongly arched at the base, and exhibits at the apex some processes, a couple of which, viewed from without, are often slightly bent towards each other, almost like the fingers on the claw of a lobster. The tibial joint has on the outer side, at the apex, a slender, somewhat curved spur directed forwards; the upper side extends itself into a broad, obliquely truncated, slightly outwards-curved blade, lying

over the lamina bulbi, and terminating externally with a blunt tooth, and under the apex of which issues a fine curved spine. Under pressure, seen through the microscope, the joint closely resembles the figure given of it by MENGE loc. cit.

OHLEBT has kindly given me specimens of his *Micryph. capito*. CAMBRIDGE has sent me an English specimen of *Walcken. hiemalis* BLACKW., which species WALCKENAER (Ins. Apt., IV, p. 510) erroneously classes under his *Argus cucullatus*.

(Pag. 245.) 26. *E. impolita* [= *Erigone obscura* (BLACKW.) 1834].

Syn.: 1834. WALCKENAERA OBSCURA BLACKW., Res. in Zool. p. 321 (*sec. Spid.* of Gr. Brit.
1864. „ „ ID., *Spid. of Gr. Brit.*, II, p. 297, Pl. XX, fig. 212.

Though BLACKWALL does not mention the opaque, rugous surface of the cephalothorax, I nevertheless look upon his synonym as certain, for BLACKWALL's description of the remarkably characteristic palpi of *W. obscura* exactly agrees with WESTRING's spider, of which I have the type-specimens in my collection. CAMBRIDGE also writes to me, that he is of the same opinion. — The palpal clava is large, very complicated; the back of the lamina, viewed in profile, is serrulated from the base to before the middle, where it forms a ledge or coarse tooth; from the neighbourhood of the base of the bulb, on its inner side, proceeds a very long, fine spine directed backwards and afterwards curved downwards and forwards, which is longer than the entire clava.

(Pag. 246.) 27. *E. rugulosa* [= *Erigone rugulosa* WESTR. 1851].

Syn : 1851. ERIGONE RUGULOSA WESTR., Förteckning etc., p. 60.

I have not met with this species in any other writer than WESTRING, who has favoured me with the type-specimen to his excellent and fully sufficient description.

(Pag. 248.) 28. **E. scabricula** [= *Erigone scabricula* WESTR. 1851].

Syn.: 1851. ERIGONE SCABRICULA WESTR., Förteckn. etc., p. 42.

1860. WALCKENAERA AGGERIS CAMBR., Descr. of two Brit. Spid., in Ann.
and Mag. of Nat. Hist., 3 Ser., V, p. 173 (3).

1864. WALCKENAERA AGGERIS BLACKW., Spid. of Gr. Brit., II, p. 301,
Pl. XXI, fig. 216.
1868. LOPHOCARENUM SCABRICULUM MENGE, Preuss. Spinn., II, p. 205,
Pl. 40, tab. 102.

(Pag. 251.) 29. *E. subæqualis* [= *Erigone sub-æqualis* WESTR. 1851].

Syn.: 1851. ERIGONE SUBÆQUALIS WESTR., Förteckn. etc., p. 42.

Of this species, distinguished by the little pointlike fovea immediately behind the interval between the posterior lateral and central eyes of ♂, I have received a (dried) male specimen from WESTRING. To WESTRING's accurate description may be added, that the patellar joint of the palpus is conical, its length scarcely greater than its breadth at the apex; the tibial is about the same length as the patellar joint, but thicker: viewed from the side it appears somewhat dilated below, and broader than it is long: *this inferior, rounded contour is accompanied by a fine curved spine, proceeding from the base of the bulb.* The clava is shortly oval, almost as long as the two preceding joints put together, the bulb but little complicated. The species resembles *Micryph. ovatus* C. KOCH, OHL. ¹⁾, but this last species is somewhat smaller, has the area of the 4 central eyes in ♂ much longer than it is broad, the tibial joint of the palpus at its extremity, above, drawn out into two pointed processes, the external one being the larger, and directed somewhat upward, the internal lying close in upon the lamina; the back of the cephalothorax more uniformly convex, without depression in front of the centre, a narrow linear groove behind the interval between the posterior lateral and central eyes, etc., all which serve to distinguish it from *E. sub-æqualis*. — Mr CAMBRIDGE has communicated to me an English specimen of *E. sub-æqualis* under the name of *Walckenaera fortuita* CAMBR.

1) C. KOCH, Die Arachn., VIII, p. 96, Taf. CCLXXIX, fig. 665, 666; OHLERT, Aran. d. Prov. Preuss., p. 56, 75. — C. KOCH under his *Micr. ovatus* erroneously cites *Theridium sulcifrons* REUSS (Zool. Misc. Arachn., p. 225 (231), Pl. XV, fig. 10), which no doubt is the same as *Platyopis sulcifrons* MENGE (Preuss. Spinn., II, p. 179, Pl. 33, tab. 81), and is nearly allied to, but specifically different from *Neriere bicuspis* CAMBR. (Descr. of 24 spec. of spid. etc., p. 8626 (28)). Of both these species of *Erigone* I possess original specimens.

(Pag. 253.) 30. *E. retusa* [= *Erigone retusa* WESTR. 1851].

- Syn.*: 1851. ERIGONE RETUSA WESTR., Förteckn. etc., p. 41.
 1862. NERIENE ELEVATA CAMBR., Descr. of ten new spec. etc., in *Zoologist*, 1862, p. 7966.
 1868. TMETICUS FOVEOLATUS MENGE, Preuss. Spinn., II, p. 186, Pl. 35, tab. 86.

CAMBRIDGE himself has kindly sent me a male specimen of this species, under the name of *Nerienne elevata* CAMBR.

(Pag. 255.) 31. *E. simplex* [= *Erigone fusca* (BLACKW.) 1834].

- Syn.*: 1834. NERIENE FUSCA BLACKW., Res. in Zool., p. 382, (*sec. Spid. of Gr. Brit.*).
 1851. ERIGONE SIMPLEX WESTR., Förteckn. etc., p. 44.
 1853. NERIENE AGRESTIS BLACKW., Descr. of some newly disc. spec. etc., in *Ann. and Mag. of Nat. Hist.*, 2 Ser., XI, p. 23.
 1864. „ FUSCA BLACKW., *Spid. of Gr. Brit.*, II, p. 275, Pl. XIX, fig. 189, Pl. XXII, fig. *E*.
 1864. „ AGRESTIS ID., *ibid.*, p. 276, Pl. XIX, fig. 190, Pl. XXII, fig. *D*.
 1869. MICRONETA TESSELLATA MENGE, Preuss. Spinn., III, p. 230, Pl. 45, tab. 129.

This species may be easily recognised by WESTRING's description of the appearance in profile of the cephalothorax in ♂: this profile in fact shows *two* depressions, one immediately behind the eyes, the other towards the middle; also the clypeus has a broad transverse depression under the eyes. The extremity of the tibial joint of the palpus projects, on the upper side, a small pointed tooth directed forward and somewhat outward: another small tooth is situated at the inner side of this tooth and directed more downward, but it is not easily seen without the microscope; under pressure the extremity of the joint looks often quite as in BLACKWALL's fig. *E, c* (Pl. XX). The figures of the male's palpal organs are much better in *Spid. of Gr. Brit.* than in MENGE's Preuss. Spinn. — A male specimen of this spider was kindly communicated to me by WESTRING; another specimen has been by Mr CAMBRIDGE, to whom I had sent it, declared identical with *Nerienne fusca* BLACKW. and *N. agrestis* ID., which appear to be identical, and the descriptions of which also well suit WESTRING's *E. simplex*.

MENGE has kindly sent me a ♂ and a ♀ of this spider under the name of *Microneta tessellata* MENGE. On that species see more farther on under *E. parasitica* and *E. tessellata* WESTR.

(Pag. 257.) 32. **E. graminicola** [= *Erigone graminicola* (SUND.) 1830].

- Syn.*: 1830. LINYPHIA GRAMINICOLA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1829, p. 213.
 1831. THERIDIUM RUBRIPES HAHN, Die Arachn., I, p. 92, Taf. XXII, fig. 70.
 1833. MICRYPHANTES RUBRIPES C. KOCH, in HERR-SHÆFF., Deutschl. Ins., 121, 24 (sec. C. KOCH, Die Arachn.)
 1838. „ „ ID., Die Arachn., IV, p. 121, Taf. CXLII, figg. 328, 329.
 1841. ARGUS GRAMINICOLIS WALCK., H. N. d. Ins. Apt., II, p. 351, (saltem ad part.).
 1851. ERIGONE GRAMINICOLA WESTR., Förteckn. etc., p. 43.
 1852. NERIE NE „ BLACKW., A Catal. of Brit. Spid., in Ann. and Mag. of Nat. Hist., 2 Ser., IX, p. 269.
 1864. „ „ ID., Spid. of Gr. Brit., II, p. 272, Pl. XIX, fig. 186.
 1867. MICRYPHANTES RUBRIPES OHL., Aran. d. Prov. Preuss., p. 56, 73.
 1868. TMETICUS GRAMINICOLUS MENGE, Preuss. Spinn., II, p. 191, Pl. 36, tab. 90.

Neriere graminicolens BLACKW. 1843 is a variety of *Linyphia bucculenta* (CLERCK): vid. sup., pag. 53. — *Neriere rubripes* BLACKW. 1836 is also a different species and the same as *E. rufa* (REUSS). NOB., or *E. erythrocephala* (C. KOCH), WESTR.: see that species farther on. — WALCKENAER in the synonyms of his *Argus graminicolis* confounds three widely different species, viz. *E. graminicola*, *E. rufa* (REUSS) and *Lin. concolor* REUSS. — See also next page, *E. dentifera* WESTR.

(Pag. 259.) 33. **E. rufipes** [= *Erigone rufipes* (LINN.) 1758].

- Syn.*: 1758. ARANEA RUFIPES LINN., Syst. Nat., Ed. 10, I, p. 621.
 1830. LINYPHIA RUFIPES SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1829, p. 215; 1832, p. 259.
 1838. MICRYPHANTES CRASSIPALPUS C. KOCH, Die Arachn., IV, p. 128, Taf. CXLII, figg. 330, 331.
 1841. ARGUS „ WALCK., H. N. d. Ins. Apt., II, p. 353.
 1841. NERIE NE MUNDA BLACKW., The differ. in the number of eyes etc., p. 642.
 1847. ARGUS MUNDUS WALCK., H. N. d. Ins. Apt., IV, p. 511.
 1851. ERIGONE RUFIPES WESTR., Förteckn. etc., p. 43.
 1864. NERIE NE MUNDA BLACKW., Spid. of Gr. Brit., II, p. 265, Pl. XVIII, fig. 180.
 1867. MICRYPHANTES CRASSIPALPUS OHL., Aran. d. Prov. Preuss., p. 55, 70 (ad part.: ♀, non ♂).

1868. GONGYLIDIUM NIGRICANS MENGE, Preuss. Spinn., II, p. 183, Pl. 34, tab. 84.

1868. „ CRASSIPALPUM ID., ibid., Pl. 34, tab. 84 (*explic. tab.*).

C. KOCH erroneously refers (Die Arachn., VIII, p. 105) LINNÆUS' and SUNDEVALL'S *Aran.* or *Lin. rufipes* to his *Micryph. cæspitum* (*E. cristata* (BLACKW.), *E. bicornis* WESTR.): Conf. THOR., Rec. crit. Aran., p. 57. Even if the citation from LINNÆUS be considered uncertain, still *rufipes* is the oldest specific name, and, if we refuse to call this spider *E. rufipes* (LINN.) 1758, we must call it *E. rufipes* (SUND.) 1830.

Neriene rufipes BLACKW. 1833 ¹⁾ is a different spider. — Of *Micryph. crassipalpus* OHL. the female only (of which he has sent me specimens) belongs to *E. rufipes* WESTR.: the description of the male does not answer to that species. OHLERT says for example of its mandibles (loc. cit., p. 70), that, as in the female, they are *destitute of teeth on the fore side*. — Another species of *Erigone*, which may keep the specific name *crassipalpis*, is *Lophocarenum crassipalpe* MENGE ²⁾, concerning which vid. supr., p. 118.

(Pag. 261.) 34. *E. dentifera* [= *Erigone dentifera* WESTR. 1861].

This species is *very* closely allied to *E. graminicola*, but the form of the mandibles etc. is different (see WESTRING'S description): it is, however, perhaps but a variety of that species. Other species, to which it is allied, are *Neriene affinis* BLACKW. 1855 ³⁾ — which is certainly identical with *Tmetiscus leptocaulis* MENGE ⁴⁾ — and *Ner. Huthwaitii* CAMBR. 1861 ⁵⁾; but it is easily distinguished from both. In *E. affinis* or *leptocaulis*, the patellar joint of the palpi in ♂ is more than double as long as it is broad, rather longer than the patella of the 1st pair of legs, whereas in *E. dentifera* it is short, and, as in *E. Huthwaitii*, shorter than the patella of the 1st pair, conical, scarcely double as long as its own breadth at the apex; the spine under the apex of the patellar joint in *E. affinis*, is either absent

1) Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 345; Spid. of Gr. Brit., II, p. 251.

2) Preuss., Spinn., II, p. 208, Pl. 41, tab. 105.

3) Descr. of two newly disc. spec. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., XVI, p. 121; BLACKW., Spid. of Gr. Brit., II, p. 259, Pl. XVIII, fig. 175.

4) Preuss. Spinn., II, p. 185, Pl. 35, tab. 85.

5) Descr. of ten new spec. etc., in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 436; BLACKWALL, Spid. of Gr. Brit., II, p. 260, Pl. XVIII, fig. 176.

or at least in a more rudimentary state in *E. dentifera*. The clava in this last is *longer than the tibial joint*, but in *E. affinis* it is much shorter than that joint, small and rounded. — In *E. Huthwaitii* the tibial joint is almost *double* the length of the patellar, in *E. dentifera* it is rather *somewhat shorter* than the patellar joint, at least on the under side; in front it is drawn out into a short, broad process, which is divided by a small notch into two short teeth. As in *E. Huthwaitii*, the clava has at its apex a straight, black spine; it is oval, something thicker than the thigh, and not quite double as broad as it is long: in *E. Huthwaitii* the clava is small, rounded, shorter than the tibial joint, and not so broad as the thigh ¹). — *E. Huthwaitii* (CAMBR.) has been captured by Dr v. PORATH in Småland, and by Dr TULLBERG in Skåne; it has not before been recorded as Swedish.

(Pag. 262.) 35. *E. dentata* [= *Erigone dentata* (REUSS) 1834].

Syn.: 1834. THERIDIUM DENTATUM REUSS, Zool. Misc., Arachn., p. 223 (229),
Taf. XV, fig. 8.

1841. ARGUS DENTATUS WALCK., H. N. d. Ins. Apt., II, p. 354.

1864. NERIENE DENTATA BLACKW., Spid. of Gr. Brit., II, p. 258, Pl.
XVIII, fig. 174.

1868. TMETICUS DENTATUS MENGE, Preuss. Spinn., II, p. 187, Pl. 35,
tab. 87.

?1868. „ CRISTATUS ID., *ibid.*, p. 189, Pl. 36, tab. 88 (*ad part.*: ♂).

Tmeticus cristatus MENGE ♂ is probably only a variety of *Tm. dentatus* ♂ (as regards the *female* I cannot venture an opinion), though it is stated to differ from this last partly by some dissimilarity in the organs of copulation, and partly by the presence of a longitudinal, pale, central line on the abdomen, which is absent in *Tm. dentatus*. This last characteristic cannot be considered as of any great weight (a similar line is often, but not always, found in e. g. *E. rufipes*); it is nevertheless the only one by which I could distinguish a ♂ of *T. cristatus* kindly sent to me by MENGE, from my male specimens of *E. dentata*, among which is one determined by MENGE himself. Even with the microscope I am unable to see any difference in the sexual organs.

1) I possess a ♂ of an *Erigone*, which I have captured somewhere in Germany, and which I can scarcely distinguish from *E. dentifera* by any other marks than that the tibial joint is longer than the patellar, and that the *clava* is *long and slender, slenderer than the thighs of the 1st pair of legs, and the length more than double the breadth*; I call this species *Erigone decens*.

(Pag. 264.) 36. *E. chelifera* [= *Erigone rubens* (BLACKW.) 1833].

- Syn.*: 1833. NERIE NE RUBENS BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 189.
 1834. THERIDIUM CHELIFERUM REUSS, Zool. Misc., Arachn., p. 231 (237), Pl. XVI, fig. 4.
 1841. ARGUS CHELIFERUS WALCK., H. N. d. Ins. Apt., II, p. 364.
 1850. MICRYPHANTES ISABELLINUS MENGE, Verzeichn. Danz. Spinn., p. 71.
 1851. ERIGONE CHELIFERA WESTR., Förteckn. etc., p. 44.
 1864. NERIE NE RUBENS BLACKW., Spid. of Gr. Brit., II, p. 270, Pl. XVIII, fig. 184.
 1867. MICRYPHANTES ISABELLINUS OHL., Aran. d. Prov. Preuss., p. 57, 80.
 1868. GONATIUM CHELIFERUM MENGE, Preuss. Spinn., II, p. 180, Pl. 34, tab. 82.

The males of this and the following species may, as is well known, be easily distinguished by the form of the palpi. The females on the contrary are very nearly alike and difficult to distinguish by any other criterion than the appearance of the vulva. In the female of *E. rubens* or *chelifera* the two black stains, which the vulva displays, *diverge rapidly backwards*; they occupy an area much broader behind than before, and the breadth of which behind is greater than its length; in the following species, *E. isabellina*, these stains are larger, about double as long as they are broad, almost *parallel*, and they occupy an area at least as broad in front as behind, and not broader there than it is long.

(Pag. 265.) 37. *E. isabellina* [= *Erigone isabellina* (C. KOCH) 1841].

- Syn.*: 1841. MICRYPHANTES ISABELLINUS C. KOCH., Die Arachn., VIII, p. 109, Taf. CCLXXXII, figg. 676—678.
 1841. NERIE NE RUBELLA BLACKW., The differ. in the numb. of eyes, p. 648.
 1851. ERIGONE ISABELLINA WESTR., Förteckn. etc., p. 44.
 1864. NERIE NE RUBELLA BLACKW., Spid. of Gr. Brit., II, p. 281, Pl. XIX, fig. 194.
 1868. GONATIUM ISABELLINUM MENGE, Preuss. Spinn., II, p. 182, Pl. 34, tab. 83.

The specific names *isabellina* and *rubella* for this species are nearly contemporaneous. — When, of two synonymous names, whose relative priority I am not able to determine with certainty, the one has been proposed in an independent work, and the other in a periodical of the same year, in which the other work appeared, I have made it a rule to prefer (under circumstances in other respects similar) the name published in the independent work; for the latter

Numbers at least of a periodical do not usually appear till the year *after* the date which the periodical bears. KOCH's specific name appears to me moreover preferable to BLACKWALL's in that his first description was accompanied by *figures*, which was not the case with BLACKWALL's, and it is also more generally known than the latter.

(Pag. 276.) 38. **E. robusta** [= *Erigone robusta* WESTR. 1851
+ *Erigone rufa* (REUSS) 1834].

♀ [= *E. robusta* WESTR.]:

Syn.: 1851. ERIGONE ROBUSTA WESTR., Förteckn. etc., p. 43.

♂ [= *E. rufa* (REUSS)]:

Syn.: *Vid. infra* p. 132 sub *E. erythrocephala* WESTR.

Of the *female* here described by WESTRING, on which this species was in 1851 founded, and which therefore is the type of the species, I have a specimen determined by WESTRING himself, which Prof. TH. FRIES captured in the isle of Maasöe in the Norse Finnmark and kindly presented to me. From ♀ of *E. rufa* or *erythrocephala* WESTR. it is without difficulty distinguished by the two last joints of the palpi *not* being thicker than the patellar joint, and nowhere thicker than the basis of the metatarsi of the 1:st pair. The length of the tibial joint is about *three* times its breadth, not only double. The anterior row of eyes seems to me somewhat curved backwards, not quite straight. The distance between the anterior central eyes and the border of the clypeus is hardly so great as the length of the area of the 4 central eyes. The vulva consists of a large, reddish brown, almost semicircular, somewhat convex, shining lamina. — The *male* is as yet unknown: that which WESTRING in Aran. Svec. refers, with a note of interrogation, to this species, does not belong to it, but to *E. rufa* (REUSS) or *E. erythrocephala* WESTR., whereof more hereafter.

WESTRING has lately sent me a ♂ captured in Östergötland by Lieutenant H. VON POST, which he now suspects, though certainly erroneously, to be the ♂ to *E. robusta*. In size, colour, form and position of the eyes, etc., this male is very like *E. rufa* or *erythrocephala* ♂, but it is easily distinguished from it by the palpi etc. The clypeus is low, not fully so high as the length of the line occupied by 3 eyes in the anterior row. The mandibles are slender, not thicker than the anterior thighs, with the fore-side almost

straight, not arched. The fore-tibiæ are somewhat stronger than the hinder ones, the bristles on the legs are coarse, almost like spines: such at least is the case with a couple on the upper side of the thighs and *one on the inner side of the tibiæ* of the first pair of legs, and I therefore think it best to refer this species to *Linyphia*, as CAMBRIDGE does, calling it *L. experta*¹⁾. The patellar and tibial joints of the palpus are together almost as long as the patella of the 1:st pair: the patellar joint is conical, scarcely longer than it is broad at the apex, with a long, curved bristle at the extremity, above, which bristle is *not* coarser than the coarsest bristles on the legs; the tibial joint is of the same length and diameter as the patellar joint, though somewhat dilated in a rounded form underneath: viewed from above its length is a little greater than its breadth, and it is oval-cylindrical, provided with hair, and, towards the apex, with a longish, finer bristle. The clava is hardly thicker than the thighs of the 1:st pair, about as long as the two preceding joints together, but nearly double as thick: the lamina has a protuberance near the base on the outside. The bulbus at the base, on the outer side, exhibits a small, projecting protuberance (*not* a large, coarse, curved appendage) and *from its under side, also near the base, proceeds almost at right angles a small appendage, slenderer and a little curved at the base, slightly increasing in thickness and almost straight towards the extremity.* The circularly curved membranous band outside the bulbus in *E. rufa* or *erythrocephala* is absent here, as well as in *E. silvestris* WESTR. and *E. aqualis* WESTR. (Vid. infr.).

(Pag. 269.) 39. *E. pinguis* [= *Erigone livida* (BLACKW.) 1836
+ *Erigone arundineti* N.].

E. livida (BLACKW.):

Syn.: 1836. NERIEINE LIVIDA BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 486.

1851. ERIGONE PINGUIS WESTR., Förteckn. etc., p. 43.

1864. NERIEINE LIVIDA BLACKW., Spid. of Gr. Brit., II, p. 252, Pl. XVIII, fig. 169.

WESTRING says p. 271 of the males of his *E. pinguis*: "Individuum unicum cepi, quod clava duplo crassiore quam mandibulæ vel

1) CAMBRIDGE, to whom I have sent a male, informs me that he has described and figured this species under the name of *Lin. experta* in a paper that is now in the press.

femora antica, et mandibulis supra apicem minus profunde excavatis instructum erat". That specimen no doubt belongs to a separate species, of which I have received specimens from Nürnberg from L. KOCH under the above received name of *E. arundineti*, and which is a little smaller than *E. livida* (*pinguis*) usually is, but in other respects is so like that species, both in general appearance and form of the palpi, that it can be distinguished almost only by the *palpal clava*, which in *E. livida* is *something shorter than the mandibles*, and, when viewed from above, oviform, elongated, with a slender extremity and its greatest diameter *not* double that of the fore thighs. In *E. arundineti* on the contrary the clava is *somewhat longer than the mandibles*, of a shorter egg-form, tapering but little towards the apex, and its greatest diameter is *more* than double that of the fore thighs. — CAMBRIDGE has kindly sent me the typical form of *E. pinguis* WESTR. under the name of *Neriere livida* BLACKW. This species is not described by MENGE: his *Micryph. lividus* ¹⁾, which I have seen, is an entirely different spider.

(Pag. 271.) 40. ***E. erythrocephala*** [= ***Erigone rufa*** (REUSS) 1834].

- Syn.*: 1834. THERIDIUM RUFUM REUSS, Zool. Misc., Arachn., p. 218 (223), Pl. XV, fig. 3 (*saltem* ♂).
 1836. MICRYPHANTES ERYTHROCEPHALUS C. KOCH, Die Arachn., III, p. 85, Taf. CI, fig. 233 [234] ²⁾.
 1836. NERIERE RUBRIPES BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 485.
 1841. MICRYPHANTES ERYTHROCEPHALUS C. KOCH, Die Arachn., VIII, p. 98, Taf. CCLXXX, figg. 667, 668 (*saltem ad part.*)
 1841. ARGUS RUFUS WALCK., H. N. d. Ins. Apt., II, p. 348.
 1864. NERIERE RUBRIPES BLACKW., Spid. of Gr. Brit., II, p. 287, Pl. XIX, fig. 201.
 1866. BATHYPHANTES INERMIS [PALLESCENS] MENGE, Preuss. Spinn., I, p. 120, Pl. 22, tab. 45 (♂).
 1866. „ BREVIPALPUS ID., ibid., p. 122, Pl. 22, tab. 47 (♀; non ♂).
 1867. MICRYPHANTES ERYTHROCEPHALUS OHL., Aran. d. Prov. Preuss., p. 56, 74 (*saltem ad part.*).
 1867. „ LAMINATUS ID., ibid., p. 56, 75.
 ? 1867. „ RUFICEPHALUS ID., ibid., p. 57, 79 (*ad part.*: ♂).

1) Preuss. Spinn., III, p. 236, Pl. 46, tab. 135.

2) In Taf. CI, among the figures, "Fig. 234" is an error of the press for "Fig. 233", and vice versa; and in the list of figures on that plate "*M. sylvarum*" is a lapsus calami for "*M. erythrocephalus*"!

The male's palpi in *E. rufa* are very characteristic. The patellar and tibial joints together are longer than the patella of the 1st pair: the patellar joint is a little thicker towards the extremity, and somewhat longer than it is broad at the apex; the tibial joint is of the same length as the patellar, slightly thicker in the middle, where its outer side forms a protuberance bearing some long, straight hairs. The clava is rather thicker than the thigh, and displays at the base, on the outer side, a large, coarse appendage, which is curved forward and upward, and is at the base continued in the form of a tooth directed backwards, towards the protuberance of the tibial joint. Of the very complicated parts of the bulbus that which most attracts attention is a long appendage, which proceeds from a horny, thick process on the under side of the bulbus, is at first directed backwards, but presently curved upward and forward, forming a membranous, pale, almost circularly curved band on the outer side of the bulbus. There are no coarse bristles or spines on the anterior thighs. The female is easily distinguished from its nearest relations by its thickened palpi, etc.; the vulva forms a thick conico-cylindrical process, rounded at the extremity, and reddish or yellowish, with a deep fovea on either side at the apex: viewed from the side it looks as if perforated at the apex, and exhibits there a little tooth in the posterior (upper) border.

Ther. rufum REUSS is erroneously referred by WESTRING to *Liniphia scopigera* GRUBE or *L. rufa* WESTR. See that species above, p. 64. A renewed study of REUSS' description has convinced me, that *Ther. rufum* is identical with the species now before us, at least the male. Concerning its bulbus it is stated, that "aussen sind mehrere gewundene Körper, namentlich ein halbdurchsichtiger, pergamentartiger, der sich weit wegziehen lässt". The female's vulva is said to consist of "einem breiten und dicken Zapfen, der an der Spitze rothbraun ist". Compare our description above. The female of *Bathyp. brevipalpus* MENGE seems to belong to this species, judging both from the description and the figure of her palpi given by MENGE (Preuss. Spinn., I, p. 123, line 16, Pl. 22, tab. 47, fig. H); the male on the contrary is certainly identical with *E. æqualis* WESTR., on which see p. 135.

The length of the tibial and patellar joints of the male's palpi, and even the convexity of his mandibles, the development of the tooth towards the extremity of these organs etc., are in this species very variable; and a careful microscopical examination of the organs

of copulation in typical specimens of both *Neriene rubripes* and *Bathypantes inermis*, kindly communicated to me by CAMBRIDGE and MENGE, have convinced me that these species are identical with the *E. erythrocephala* of WESTRING and C. KOCH, though the palpi of *N. rubripes* or *Bathyp. inermis* are longer and the above mentioned tooth on the mandibles considerably stronger than in the latter and especially than in Swedish specimens. — Whether the spider described by C. KOCH in Vol. VIII of Die Arachn. as *M. erythrocephalus* be really the same, that was first made known to the public under that name in Vol. III of the same work, is doubted by WESTRING, and is a question not easy to decide with certainty. It is very possible that under the specific name *erythrocephalus*, C. KOCH may have there confounded two or more nearly allied species. Of the same species, *E. rufa* (REUSS), NOB., the female of which WESTRING has described under the name of *E. erythrocephala*, while he erroneously assigned its ♂ to his *E. robusta* (see that species above), Dr L. KOCH has however sent me specimens of both sexes under the name of *E. erythrocephala* (C. KOCH). — OHLERT'S *Micryph. laminatus* is clearly the female of this species; his *M. ruficephalus* ♂ is probably the male of the same. His description of "*M. erythrocephalus*" seems to be founded on C. KOCH'S description and figures only. (*Micryph. laminatus* C. KOCH or *Argus laminatus* WALCK. is undoubtedly only a variety of *Linyphia dorsalis* (REUSS), WESTR., on which vid. sup., p. 73). — WALCKENAER erroneously classes *Micryph. erythrocephalus* C. KOCH under his *Argus graminicolis* ¹⁾.

Theridium bicolor HAHN ²⁾ belongs unquestionably to this or some nearly allied species, but to which, it is not possible with certainty to decide. — *Neriene bicolor* BLACKW. is a *Linyphia*: vid. sup., p. 64, *L. comata* WESTR.

(Pag. 273.) 41. **E. silvestris** [= *Erigone silvatica* (BLACKW.) 1841].

Syn.: 1841. NERIENE SYLVATICA BLACKW., The differ. in the number of eyes etc., p. 644.

1864. „ „ ID., Spid. of Gr. Brit., II, p. 254.

1866. BATHYPANTES SETIPALPUS MENGE, Preuss. Spinn., I, p. 124, Pl. 23, tab. 48 (saltem ♂).

1) Hist. Nat. d. Ins. Apt., II, p. 352.

2) Die Arachn., I, p. 91, Taf. XXII, fig. 69.

This species, as WESTRING remarks, is extremely like *E. rufa* or *erythrocephala* WESTR. I am acquainted only with the male, on whose palpi the patellar joint is very short, almost double as short as the tibial joint; it has at its apex a straight, pointed, coarse bristle or rather spine, coarser than any bristle on the legs. Viewed from in front the tibial joint is almost cylindrical, longer than it is broad, hairy; it is convex beneath. The clava is large, thicker than the thighs of the 1st pair of legs, rather longer than the two preceding joints put together; the lamina has a strong, angular protuberance at the base, as in *E. rufa*; the bulb is very complicated and has at the base a large, coarse appendage, curving rapidly forward, as in that species, which appendage however has no backward-directed tooth, nor is there any circular membranous band on the outside of the bulb; on its under side, nearer the base, may be seen a strong spine or claw curved upwards and directed outwards.

It is in consequence of a communication from CAMBRIDGE, to whom I had sent specimens of this spider, that I have been enabled to take up *Ner. silvatica* BLACKW. as a synonym of it. — MENGE has kindly favoured me with specimens of his *Bathyp. setipalpus*: the male is the same as *E. silvatica* or *silvestris* ♂, but the female specimens I cannot distinguish from *E. erythrocephala* WESTR., with which however MENGE's description does not appear to me very well to agree, and I therefore suspect that these specimens do not belong to the form which MENGE has described as ♀ of his *B. setipalpus*. See also the preceding article on *E. erythrocephala* WESTR.

(Pag. 275.) 42. *E. æqualis* [= *Erigone brevipalpis* (MENGE) 1866].

Syn.: †1851. *ERIGONE ÆQUALIS* WESTR., Förteckn. etc., p. 44.

1866. *BATHYPHANTES BREVIPALPUS* MENGE, Preuss. Spinn., I, p. 122, Pl. 22, tab. 47 (♂; non ♀).

This species is very closely connected with the two preceding, especially *E. silvatica* (*silvestris*); even the male's palpi are very much alike in these two species. The patellar and tibial joints of *E. æqualis* WESTR. are almost such as we have described those of *E. silvatica*; the patellar joint however has no spine at its apex, but only a fine bristle, as in the tibial joint, which is about half as long again as the short patellar joint. The clava is rather thicker than the thighs of the first pair, irregularly rounded, at least half as long

again as the two preceding joints put together; the lamina has a strong, angular protuberance at the base; the bulbus is tolerably complicated, with a crooked appendage at the base, outward, which appendage is smaller, especially as regards its breadth, than that of *E. silvatica*; it is produced at the base in a backward directed angle; when viewed in profile from within, the bulbus exhibits on the under side a strong spine or claw pointing forwards and slightly curved upward, which appears to be cloven at the extremity (?). The thighs of the two anterior pairs of legs are provided each with a *fine spine* or coarse bristle. These notes are from a dried male specimen lent me by WESTRING. The female is not with certainty known to me.

A ♂ preserved in spirits, which I have received from the late Prof. AL. V. NORDMANN in Helsingfors, appears to differ from WESTRING's specimen, as far as I could see, only by the clypeus being somewhat, though very little, higher than the area of the four central eyes, whereas in WESTRING's specimen the height of the clypeus and of that area are equal: WESTRING's statement that the height of the clypeus is *not* "insigniter altior quam spatium inter oculos intermedios anticos et posticos", is therefore not strictly correct.

I cannot think that this spider is identical with *Micryph. æqualis* C. KOCH 1841 ¹⁾, the description of which differs in many respects from WESTRING's spider: it is at least quite distinct from the species, to which OHLERT ²⁾ has applied the name *Micryph. æqualis* C. KOCH, and of which he has kindly sent me a ♀: the vulva in that species, as OHLERT states, exhibits a fine, linear, pinlike process somewhat thickened at tip and directed backwards!

Bathypantes brevipalpus MENGE ♂ is certainly identical with WESTRING's *E. æqualis*. The description agrees very well, as far as it can be verified on dried specimens (I have no others now at hand), and I have therefore called this species *E. brevipalpis* (MENGE).

(Pag. 233.) 43. *E. quisquiliarum* [= *Erigone viaria* (BLACKW.) 1841].

Syn.: 1841. NERIENE VIARIA BLACKW., The differ. in the number of eyes etc., p. 645.

1847. ARGUS VIARIUS WALCK., H. N. d. Ins. Apt., IV, p. 512.

1851. ERIGONE QUISQUILIARUM WESTR., Förteckn. etc., p. 44.

1) Die Arachn., VIII, p. 101, Taf. CCLXXX, fig. 669, 670.

2) Aran. d. Prov. Preuss., p. 56, 76.

1864. NERIENE VIARIA BLACKW., Spid. of Gr. Brit., II, p. 255, Pl. XVIII, fig. 171.
 1869. MICRONETA QUISQUILIARUM MENGE, Preuss. Spinn., III, p. 229, Pl. 45, tab. 128.

CAMBRIDGE has kindly sent me specimens of *E. quisquiliarum* WESTR. under the name of *Nerience viaria* BLACKWALL, whose description also suits WESTRING's spider.

Of the rather nearly allied *E. (Nerience) subtilis* CAMBR. ¹⁾, which has the tibial joint drawn out into a sharp projection in front, and which is also distinguished by its large, very complicated clava, with the lamina turning its convex side inwards and raised, towards the middle, above, into a large angular protuberance, Dr T. TULLBERG has captured a ♂ *ad.* in Skåne. This species is now for the first time recorded as inhabiting our country.

(Pag. 279.) 44. *E. gibba* [= *Pholcomma gibbum* (WESTR.) 1851].

Syn.: 1851. ERIGONE GIBBA WESTR., Förteckn. etc., p. 44.

1862. THERIDIUM PROJECTUM CAMBR., Descr. of ten new spec. etc., in Zoologist, 1862, p. 7962.

1869. PHOLCOMMA PROJECTUM THOR., On Eur. Spid., p. 98.

Of *Ther. projectum* CAMBR., the identity of which with *E. gibba* WESTR. I had (loc. cit.) not observed, CAMBRIDGE has sent me specimens of both sexes, which have been examined by WESTRING and also by him acknowledged as identical with his *E. gibba*. — The peculiar position and relative size of the eyes — two very small eyes in the centre and three unusually large ones, arranged very near to each other in a triangle, on each side, almost as in *Pholcus* — has induced me to make this species the type of a separate genus. (Conf. CAMBR. and THOR., locis cit.)

Pholcomma gibbum is *not*, as one might possibly be led to suppose, the same species as *Ceratina rubella* MENGE ²⁾, in which the two anterior central eyes are, it is true, uncommonly small and close to each other, but the remaining eyes are of the usual size, and the 4 posterior eyes all separated by intervals equal to an eye's diameter.

1) Descr. of 24 new spec. of Spid. etc., p. 8584 (24).

2) Preuss. Spinn., II, p. 172, Pl. 32, tab. 75.

(Pag. 281.) 45. **E. parasitica** [= *Erigone parasitica* WESTR. 1851].

Syn.: 1851. ERIGONE PARASITICA WESTR., Förteckn. etc., p. 45.

I have only seen a dried female specimen, communicated to me by WESTRING. It appears not to have been described either by BLACKWALL or MENGE, which however it is difficult with certainty to affirm, as the male is unknown. That among MENGE's species, which seems most to resemble it in size and colour, is ♀ of his *Microneta tessellata*¹⁾, which however specimens kindly communicated by MENGE show to be another species, and = *Nerienne fusca* BLACKW. or *Erig. simplex* WESTR. (see that species above, p. 125). The cephalothorax of *E. parasitica* is highest *a little in front of the centre*: when seen in profile it is convex, but not in a uniform curve, but somewhat depressed in the middle, where the head — which is rather strongly convex, especially behind — passes into the pars thoracica. The area of the central eyes is double as long as it is broad behind; the posterior central eyes are small, and the distance between them scarcely so great as the eye's diameter; the posterior row of eyes is *strongly curved forward*, and the distance between the posterior lateral and central eyes *double* that between the two posterior central eyes, and equal to that between the anterior and posterior central eyes. The two anterior side-eyes are the largest of all; the distance between them and the anterior central eyes is much greater than that between these last, which are very small and near each other. — In the spider, which MENGE considers as ♀ to his *Micron. tessellata*, the posterior row of eyes, viewed from above, is almost straight, and the distances between these eyes about equal: the length of the area of the central eyes is not greater than its breadth, the 4 anterior eyes are situated at about equal distances: the patellæ have a strong bristle, the somewhat thickened tibiæ two such bristles on the upper side (*not* a coarse bristle also or fine spine *on each side*, as in e. g. the rather similar *Linyphia convexa*: in all species of the genus *Linyphia* there are one or more spines also on the sides of the tibiæ).

(Pag. 284.) 46. **E. tessellata** [= *Erigone tessellata* WESTR. 1851].

Syn.: 1851. ERIGONE TESSELLATA WESTR., Förteckn. etc., p. 45.

1) Preuss. Spinn., III, p. 230, Pl. 45, tab. 129.

Whether *Ther. lichenis* REUSS ¹⁾ and *Micryph. tessellatus* C. KOCH ²⁾ belong to this, or the preceding, or any other nearly allied species, it seems to me impossible to decide, especially as only *females* are known of WESTRING'S *E. parasitica* and *E. tessellata*. MENGE, who has employed the specific name *tessellata* C. KOCH for quite another spider, *Microneta tessellata* MENGE, which is identical with *Erig. fusca* (BLACKW.) or *E. simplex* WESTR. (see above, p. 125), can scarcely be right in this; WALCKENAER ³⁾ is of opinion that *M. tessellatus* C. KOCH is the male of *Tapinopa longidens* (REUSS), which of course is a great mistake. The spider here described by WESTRING may *ad interim* keep the name *E. tessellata* WESTR. — Mr WESTRING has kindly sent me a dried specimen of this spider. In the form of the cephalothorax it agrees with MENGE'S figures of his *Microneta gracilis* ⁴⁾ and *M. pygmæa* ⁵⁾, and is very like the first of these, which, unlike *M. pygmæa*, has easily visible and comparatively long patellar and tibial bristles, as is also the case with *E. tessellata* WESTR. This last however, as I have found by specimens of *M. gracilis* kindly sent me by MENGE, is not identical with that species. In *M. gracilis* ♀ the eyes are very close together, and are nowhere, except between the two posterior central eyes, separated by a space so great as the diameter of the posterior central eyes; the distance between the anterior and posterior central eyes is not greater than that between the two last mentioned. In *E. tessellata* WESTR. on the contrary *all* the 4 posterior eyes are separated by intervals equal to an eye's diameter, and the interval between the anterior and posterior central eyes is *considerably larger* than between the two last-mentioned: the area of the 4 central eyes is therefore in this species considerably longer than it is broad behind: in *M. gracilis* the reverse is the case ⁶⁾.

1) Zool. Misc., Arachn., p. 234 (240), Pl. XVI, fig. 6.

2) Die Arachn., III, p. 86, Taf. CI, fig. 234 [233].

3) Hist. Nat. d. Ins. Apt., II, p. 352.

4) Preuss. Spinn., III, p. 233, Pl. 45, tab. 132.

5) Ibid., p. 234, Pl. 45, tab. 133.

6) Dr HAGLUND has captured at Upsala a small *Erigone*, which probably is the male of either *E. parasitica* or *E. tessellata* WESTR.; the specimen is unfortunately lost, but I have a short description of it, which may here find a place: I call it *E. synophrys*.

Erigone synophrys N. Cephalothorax luteo-fuscus, nitidus, tenuiter nigro-marginatus, parte cephalica in eminentiam oblongam humilem, sulco medio per totam longitudinem divisam, elevata, oculis mediis posticis in dorso hujus eminentiæ positis; palporum pars patellaris cylindrata, multo longior quam latior, tibialis supra producta et in apice dente utrinque armata; pedes fusco-testacei, articulationibus clarioribus; abdomen olivaceo-fuscum. — ♂ *ad.* Long. 1—1½ millim.

(Pag. 286.) 47. **E. compar** [= *Erigone compar* WESTR. 1861].

The following may be added to WESTRING's description. The patellar joint of the palpus in ♂ is very short, strongly convex above, not longer than it is broad: the tibial joint, viewed from above, is shorter and not broader than the patellar, but somewhat broader than it is long: its base on the exterior side, above, is produced in the form of a strong process, which immediately turns off at right angles to the transverse diameter of the joint, forming a coarse, straight hook directed forwards. The clava is large, and, when seen from above, has the form of a short, inverted egg; it is considerably longer than the two preceding joints taken together; the bulb has a fine circularly curved spine at the apex. Along the back of the cephalothorax is a row of somewhat coarse hairs directed forwards. The legs are bright red with yellow patellæ and yellowish tarsi. — The only specimen yet found is in my collection.

(Pag. 287.) 48. **E. rurestris** [= *Erigone fuscipalpis* (C. KOCH) 1836].

Syn.: 1836. MICRYPHANTES FUSCIPALPUS C. KOCH, Die Arachn., III, p. 46, Taf. LXXXIX, fig. 202.

1836. „ RURESTRIS ID., ibid., p. 84, Taf. CI, fig. 231, 232.

1841. ARGUS FUSCIPALPUS WALCK., H. N. d. Ins. Apt., II, p. 358.

Pars cephalica in eminentiam oblongam, plus duplo longiorem quam altiorrem elevata, cujus dorsum sub-libratum est et paullo tantum arcuatum; pone hanc eminentiam dorsum partis thoracicæ primum rectum et sub-libratum est, tum posteriora versus æqualiter et satis fortiter declive. Supra eminentia cephalica sulcum medium, per totam longitudinem ejus, inter oculos medios posticos et usque ad oculos medios anticos procurrentem, ostendit, in latere vero utrinque foveam magnam oblongam, parum profundam habet. Facies altitudine mandibularum longitudinem saltem æquans, supra seriem oculorum anteriorum transverse impressa, clypeo alto, fere perpendiculari. Oculi 4 anteriores in seriem rectam dispositi, medii eorum sub-contingentes, omnium minimi; laterales quoque contingentes, laterales antici reliquis fere majores; oculi medii postici, longe supra reliquos, in ipso dorso partis cephalicæ siti (ita ut vix videantur, si facies ab antice inspicitur), inter se spatio distant, quod oculi diametrum non superat; oculi 4 medii igitur trapezium longum et angustum, postice latius formant; spatium inter oculos medios posticos et anticos clypei altitudinem saltem æquat. Sternum et partes oris testaceo-fusca. Palpi fusco-testacei, clava fusca: pars patellaris cylindrata, duplo fere longior quam latior, pars tibialis subtus eâ brevior, sed supra ita producta, ut desuperne visa æque longa sit aque pars patellaris, dente acuminato in apice utrinque. Clava rotundata, satis complicata, femore crassior, non tam longa atque partes patellaris et tibialis conjunctim.

- ?1841. *NERIENE GRACILIS* BLACKW., The differ. in the numb. of eyes etc., p. 646.
1844. „ *FLAVIPES* ID., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., XIII, p. 182.
- ?1847. *ARGUS GRACILIS* WALCK., H. N. d. Ins. Apt., IV, p. 512.
- ?1851. *ERIGONE RURESTRIS* WESTR., Förteckn. etc., p. 43.
- ?1864. *NERIENE GRACILIS* BLACKW., Spid. of Gr. Brit., II, p. 256, Pl. XVIII, fig. 172.
1864. „ *FLAVIPES* ID., ibid., p. 264, Pl. XVIII, fig. 178.
1867. *MICRYPHANTES FUSCIPALPUS* OHL., Aran. d. Prov. Preuss., p. 55, 68.
1869. „ *TENUIPALPUS* MENGE, Preuss. Spinn., III, p. 238, Pl. 46, tab. 137.

Micryphantes fuscipalpus C. KOCH and *M. rurestris* ID. are undoubtedly, as WALCKENAER and OHLERT assume, one and the same species: the former was described in the 3rd, the latter in the 5th Number of Vol. III of "Die Arachniden", and the name *fuscipalpis* has accordingly the priority. — CAMBRIDGE is of opinion, that *Nerienne gracilis* BLACKW. is not different from *N. flavipes* ID.; the description of the latter exactly suits the specimens of *E. fuscipalpis*, which I have received from CAMBRIDGE under the name of *N. gracilis* or *flavipes*. — OHLERT has furnished me with specimens of his *Micryph. fuscipalpus*, and I have also received original specimens of *M. tenuipalpis* MENGE from MENGE himself.

The palpus-clava of this species, at the under side of the base, inward, exhibits a small tooth directed backwards, and also at the base, on the outer side, a large appendage curved in a sharp, almost right angle upwards, which appendage usually lies close to the bulbus, and is then difficult to distinguish, but in dried specimens stands out and then immediately attracts notice: it is broader towards the extremity, thin and transparent along the middle, so that it has the appearance of being cloven longitudinally. The mandibles have along the outer edge of their fore side a row of very fine teeth. The species is also distinguished by the dark, towards the extremity usually black palpi (in the female they are generally yellowish at the base), which form a striking contrast with the light coloured legs.

(Pag. 289.) 49. *E. penicillata* [= *Erigone penicillata* WESTR. 1851].

- Syn.: 1851. *ERIGONE PENICILLATA* WESTR., Förteckn. etc., p. 60.
1862. *NERIENE CORTICEA* CAMBR., Descr. of ten new spec. etc., in Zoologist, 1862, p. 7964.
1867. *MICRYPHANTES CRISTATOPALPUS* OHL., Aran. d. Prov. Preuss., p. 55, 72.

This little spider is easily recognized by a tuft of tolerably short, thick bristles, arranged almost like a comb, on the tibial joint of the palpus in ♂. It is not described either by BLACKWALL or MENGE.—I have been furnished with original specimens of both *Nerienne corticea* and *Micryph. cristatopalpus* through the kindness of Messrs CAMBRIDGE and OHLERT.

(Pag. 290.) 50. **E. Sundevallii** [= *Erigone Sundevallii* WESTR. 1851].

Syn.: 1851. ERIGONE SUNDEVALLII WESTR., Förteckn. etc., p. 44.
 1869. MICRONETA „ MENGE, Preuss. Spinn., III, p. 232, Pl. 45,
 tab. 131.

This species differs from all others belonging to the genus *Erigone* that I know of, in that the anterior tibiæ and metatarsi are, on the under-side, armed with a double row of *spines*, which are considerably coarser in ♀ than in ♂. The three long bristles along the back of the cephalothorax, which WESTRING mentions, but which MENGE has not found upon his specimens, are easily visible not only on several females in my collection, but also on a ♂ sent me by WESTRING.

(Pag. 292.) 51. **E. phæopus** [= *Erigone brevis* (REUSS) 1834].

Syn.: 1834. THERIDIUM BREVE REUSS, Zool. Misc., Arachn., p. 236 (242), Pl. XVI, fig. 8.
 1841. ARGUS BREVIS WALCK., H. N. d. Ins. Apt., II, p. 356.
 1845. MICRYPHANTES PHÆOPUS C. KOCH, Die Arachn., XII, p. 151, Taf. CCCCXXXI, figg. 1071, 1072.
 1847. THERIDION „ WALCK., H. N. d. Ins. Apt., IV, p. 495.
 1851. ERIGONE PHÆOPUS WESTR., Förteckn. etc., p. 43.
 1867. MICRYPHANTES PHÆOPUS OHL., Aran. d. Prov. Preuss., p. 55, 71.
 1868. CERATINA BREVIS MENGE, Preuss. Spinn., II, p. 171, Pl. 32, tab. 74.

MENGE has applied the specific name *brevis* REUSS to this spider, and I have also retained it, for REUSS' description suits the species well, though his figures are bad. It is excellently described by OHLERT under the name of *Micryph. phæopus* C. KOCH, and I have also received it under the same name from Dr L. KOCH.

In *E. brevis* the tibial joint of the male's palpus is rather longer than the patellar joint; it has at the base, on the outer side,

a strong, truncated process or lobe, pointing outwards and forwards, and bearing at its apex a pointed tooth directed downwards, forming an almost right angle with the process; the bulbus has at the base, immediately before that process, a somewhat longer, upwards- and forwards-curved spur, and at the apex a long, almost circularly curved spine. The clava is irregularly rounded, shorter than the tibia of the 1st pair. The legs and palpi are of a brownish- or rusty yellow colour, the cephalothorax and dorsal shield of the abdomen dark brown.

Walckenaera depressa BLACKW. 1836 ¹⁾ is probably a synonym to this species; the description and figures given by BLACKWALL appear however to me to suit the following species, *E. brevipes* WESTR., about equally well; perhaps have both been confounded by BLACKWALL under the name of *W. depressa*.

In a nearly related species, of which L. KOCH presented me with specimens collected in the neighbourhood of Nürnberg, and which I call *E. Wideri*, the legs and palpi, with the exception of the brown bulbus genitalis of the ♂, are bright yellow; the male's tibial joint, which is shorter than the patellar joint, is at the outer side drawn out into a triangular tooth; the clava is oblong, very large, as long as the tibia of the first pair; the spur at the base of the bulbus is longer and coarser than in *E. brevis*. The cephalothorax is rather paler than in that species, the head is considerably higher, sloping slightly backwards above, sloping rapidly behind towards the pars thoracica, with a straight, or rather slightly concave, dorsal surface, so that the posterior centre eyes are situated higher than any other point of the cephalothorax. See also next species.

(Pag. 294.) 52. *E. brevipes* [= *Erigone brevipes* WESTR. 1851].

Syn.: 1851. ERIGONE BREVIPES WESTR., Fürteckn. etc., p. 43.

?1868. CERATINA ROTUNDA MENGE, Preuss. Spinn., II, p. 173, Pl. 32, tab. 76.

Of this species, the male of which was unknown to WESTRING, this author has kindly sent me the type-specimen to examine. It appears to differ from *Erigone brevis* ♀ almost only by the head being separated from the thorax by somewhat deeper grooves, and by the cephalothorax having impressed points only on the sides, near the edge, while the rest of its surface is smooth and shining,

1) Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 482; Spid. of Gr. Brit., II, p. 306, Pl. XXI, fig. 221.

whereas in *E. brevis* the whole cephalothorax, even the pars cephalica, is finely chagrined by numerous small punctures. In this *E. brevipes* ♀ agrees with a fullgrown ♂ captured in Östergötland by Dr HAGLUND, and which I therefore consider to be the ♂ of *E. brevipes*. This ♂ differs from *E. brevis* ♂ also by the absence of the projecting lobe on the outside of the tibial joint (see preceding species); that joint is but little shorter than the patellar joint: it is somewhat dilated at the extremity, with a little downward-curved tooth at the extremity above, outward, and another, smaller, beneath, inwards. The head is rather higher than in *E. brevis*, sloping rather strongly backward for a considerable distance: its uppermost part is short, rounded-convex. In *E. brevis* the head passes into the pars thoracica by almost insensible gradations, and is but slightly convex; in both species the highest point of the head is situated a little behind the centre eyes. The colour of *E. brevipes* is the same as that of *E. brevis*.

A ♂-specimen of *Ceratina rotunda*, lent me by MENGE, appears to me to differ from *E. brevipes* ♂ by its rather smaller size, blackish yellow cephalothorax and greyish yellow legs, and especially by its anterior row of eyes being straight, and the clypeus, viewed in profile, being very convex, almost geniculated, whereas in *E. brevipes* ♂ the anterior row of eyes is clearly curved forward and the clypeus almost straight. These differences forbid my unreservedly classing *C. rotunda* as a synonym to *E. brevipes*, which it in other respects greatly resembles ¹⁾.

1) I here give descriptions of an easily recognizable Swedish *Erigone*, and of a small *Erigone*-like *Theridium*, which both appears to be new to science:

Erigone mordens n. Cephalothorax dense impresso-punctatus, cum mandibulis magnis, divaricantibus ferrugineus; parte cephalica altiore, linea impressa utrinque pone oculos laterales posticos; pedes palpique fusco-testacei, abdomen testaceo-cinereum; palporum pars patellaris paullo longior quam latior, tibialis apice, supra, versus latus interius in procursum minorem porrectum producta. — ♂ *ad.*; long. c:a 2½ millim.

Cephalothorax c:a 1 millim. longus, muticus, punctis parvis densis impressis rugosus, sub-nitidus, impressionibus cephalicis et fovea pone medium manifestis; pars cephalica supra partem thoracicam paullo elevata, a latere visa dorso æqualiter arcuato in partem thoracicam paullo declivis, serie pilorum fortium secundum medium instructa; pone oculum lateralem posticum sulco longitudinali postice angustato utrinque impressa. Clypei altitudo longitudinem lineæ a 3 oculis seriei anticæ occupatæ æquat; oculi medii antiqui reliquis, qui sub-æquales sunt, multo minores et, ut oculi laterales, contingentes; postici laterales a mediis spatio distant, quod oculi diametrum superat et majus est quam spatia quibus distant medii

(Pag. 296.) VIII. PHOLCUS [= *Pholcus* WALCK. 1805.]

Vid. THOR., On Eur. Spid., p. 101.

(Pag. 296) Ph. opilionoides [= *Pholcus phalangioides* (FUESSL.) 1775].

Syn.: ? 1775. ARANEA PHALANGIOIDES [PHALANGIOIDES] FUESSL., Verzeichn. Schweitz. Ins., p. 61.

1785. „ METICULOSA FOURCR., Entom. Par., p. 537 (sec. SIMON, loc. infra cit.).

1790. „ PLUCHII ROSSI, Fauna Etrusca, II, p. 134 (salt. ad part.).

1802. „ PHALANGIOIDES WALCK., Faune Par., II, p. 213.

postici inter se et a mediis anticis. Sternum latum, forma fere cordis antice truncati, sub-rugosum, cum maxillis labioque lætius testaceo-fuscum. Mandibulæ ad basin femoribus anticis duplo crassiores, sub-ovatæ, in dorso convexæ et tenuissime granulatæ, divaricantes, versus apicem fortius angustatum foras sub-curvata, sulco unguiculari dentibus longis armato, ungui longo, forti, parum curvato. Maxillæ basi dilatata, postea versus apicem non angustata, in labium inclinata. Palpi sat tennes: pars femoralis femore antico plus duplo brevior, patellaris sub-cylindrata, paullo longior quam latior, brevior quam patella pedum 1:mi paris; pars tibialis longitudine fere patellaris, versus latus *interius* in procursum sat parvum, tennem producta. Clava paullo longior quam partes patellaris + tibialis, æque crassa atque mandibula; lamina ovato-sub-triangulari, lobo parvo in latere exteriori; bulbus subtus ad basin lateris exterioris procursum satis fortem, curvatum, rufo-fuscum, et ad apicem spinam longam tennem, curvatam, nigram ostendit. Pedes longi, tennes, prop. 1, 4, 2, 3; 1:mi paris fere 4 millim. longi, patella $\frac{1}{4}$ longitudinis tibiæ vix superanti, tarso $\frac{3}{4}$ saltem metatarsi æquant. Abdomen sub-ellipticum, angustius.

In Westrogothia semel inventa. — Ad formam cephalothoracis, abdominis et pedum cum *E. longipalpi* satis conveniens, sed forma palporum, margine cephalothoracis mutico, colore, cet., abunde distinctum.

Theridium brachiatum N. cephalothorace læte castaneo, abdomine nigricanti, pedibus longissimis flavis; palpis piceis longitudine fere corporis, clava nigricanti; lamina bulbi apice oblique truncata ibique intus in uncum magnum curvatum producta. — ♂ ad. Long. c:a $1\frac{1}{2}$ millim.

Cephalothorax c:a $\frac{3}{4}$ millim. longus, ovatus, nitidus, pilis aliquot raris longis sparsus, quorum duo inter oculos medios longissimi, porrecti; clypeus sub oculos impressus, altitudine mandibularum longitudinem duplamque longitudinem areæ oculorum mediorum æquant; oculi medii fere in quadratum dispositi, laterales contingentes, a mediis æque circiter longe distantes atque hi inter se. Mandibulæ angustæ, dorso recto, haud convexo. Maxillæ versus apicem sub-angustata, in labium inclinata. Palpi valde longi; pars femoralis sub-cylindrata, $\frac{3}{4}$ cephalothoracis longitudine fere æquans, pilis fortibus raris sparsa, præsertim subtus; pars patellaris eâ fere crassior, sed vix duplo longior quam latior, ovato-cylindrata,

1805. PHOLCUS PHALANGIOIDES WALCK., Tabl. d. Aran., p. 80.
 1836. „ „ DUGÈS, in CUV., Règne Anim., VII, Arachn.,
 p. 49, Pl. 9, fig. 6.
 1838. „ NEMASTOMOIDES C. KOCH, Die Arachn., IV, p. 97, Taf.
 CXXXVI, fig. 312.
 1853. „ PLUCHI LUCAS, Anim. artic. de l'île de Crète, in Rev. et
 Mag. de Zool., 2 Ser., V, p. 27.
 1864. „ PHALANGIOIDES BLACKW., Spid. of Gr. Brit., II, p. 208,
 Pl. XV, fig. 137.
 1866. „ OPILIONOIDES SIM., Monogr. des espèces europ. du genre
 Pholcus, in Ann. de la Soc. Ent. de France,
 4 Sér., VI, p. 120, Pl. 2, figg. 1—7.
 1869. „ NEMASTOMOIDES CAN. et PAV., Aran. Ital., p. 65¹⁾.

FUESSLIN has left no description whatever of his *Aran. phalangoides*: he only says, that "it is not uncommon at Geneva in wine-cellars and closed vaults". I have not yet been able to get specimens of *Pholcus* from Geneva to compare; but as FUESSLIN refers to GEOFFROY'S Hist. abrégée des Insectes qui se trouvent aux environs de Paris, II, p. 651, N^r 17, where a spider is described (without specific name), which French writers generally consider as identical with *Pholcus phalangoides* WALCK. or *Ph. opilionoides* SIMON, I think we may preserve to this species the well known specific name *phalangoides*, with FUESSLIN as authority. (Also HAHN erroneously writes the name "*phalangoides*" instead of *phalangoides*). — *Ar. phalangoides* GEOFFR. (Hist. abrégée d. Ins., 2^e Éd., p. 734), under which *Ar. phalangoides* FOURC. is cited, is unknown to me: *Ar. phalangoides* FOURC. is, according to SIMON (loc. cit.), not a *Pholcus* at all, whereas he cites *Ar. meticulosa* FOURC. as synonymous with his

deorsum sub-curvata; pars tibialis extus secundum bulbi latus exterius producta ibique paullo longior et latior quam pars patellaris, lobo sub-triungulo, deorsum directo, ad basin; lamina lateri interiori partis tibialis, prope basin ejus, affixa, æque circiter longa atque pars femoralis, duplo longior quam latior, quadrilatera fere, versus apicem sub-dilatata, margine exteriori (superiore) late emarginato, apice late et oblique truncato, angulo apicis interiori (inferiore) in uncum magnum, acuminatum, curvatum, inferiora versus et tum deorsum (foras) directum productum, et dente acuto prope hunc uncum armato. Pedes solito longiores, femoribus et metatarsis præsertim elongatis; 1^{mi} paris longissimi, c:a 6½ millim. (patella hujus paris vix ¼ tibiæ æquat, tarsus ⅓ metatarsi); patellæ supra 1, tibiæ supra 1, 1 setas sub-erectas habent, reliqua internodia talibus setis carent; præterea pilis fortibus rarioribus vestiti sunt pedes.

Unicum specimen masculum, siccatum, cephalothorace et abdomine valde corrugatis, vidi, in Ostrogothia a Cel. D:re E. HAGLUND inventum.

1) According to specimens kindly presented to me by Prof. CANESTRINI.

Ph. opilionoides. I have unfortunately not been able to obtain access to FOURCROY's "Entomologia Parisiensis".

AS BLACKWALL under his *Ph. phalangioides*, and SIMON under his *Ph. opilionoides*, WESTRING has under the spider before us erroneously cited *Ph. opilionoides* (SCHRANCK), C. KOCH. Many other authors also have either united or confounded this last mentioned species with *Ph. nemastomoides* C. KOCH, which is identical with the *Ph. phalangioides* of BLACKWALL and most French writers, or *Ph. opilionoides* WESTR. and SIM. I have above given the most important synonyms for this last species; it may perhaps not be out of place to do the same for the real *Ph. opilionoides* (SCHRANCK), which I look upon as identical with *Aranea Puchii* Scop., and to mention some of the marks, whereby they may be distinguished. As regards my description of the male's palpal clava, the following should be observed. In both species the tarsal joint in ♂ is short and thick; the almost globular *bulbus* is articulated to its *extremity*, and from its outer side projects a coarse process ("*procursus*") directed forwards or parallel to the *bulbus*, dilated and truncated at its extremity; the *bulbus* displays on the under side a strong, compressed, forwards-curved claw ("*uncus*"), and immediately before it two smaller "*appendices*", the anterior usually of a dark, the posterior of a pale colour.

Ph. phalangioides (FUESSL.) 1775 cephalothorace testaceo-albicanti, *macula magna sub-postica fusca, lineâ albicanti plerumque geminatâ*; sterno plerumque testaceo-albicanti, interdum fuscior et maculis clarioribus circumdato; maxillis testaceis; palporum partis tarsalis procursu in ♂ apice levissime tantum et inæqualiter impresso vel sub-emarginato, *non fisso*, unco bulbi minus compresso, versus apicem æqualiter angustato, margine ejus brevior sive acie æqualiter (concavo-) curvata, appendice bulbi anteriore angusta, apice in angulum sub-rectum flexa, fere [—formi ¹]. — Long. corporis 6—7, cephalothoracis c:a 2 millim.

Syn.: 1861. PHOLCUS OPILIONOIDES WESTR., Aran. Suec., p. 296.

Cetera vid. supra.

Ph. opilionoides (SCHRANCK) 1783 cephalothorace testaceo-albicanti, *lineis duabus mediis sub-sinuatis maculisque binis utrinque fuscis*, sterno fusco, *macula media aliisque ad marginem utrinque 4 albicantibus*; maxillis fuscis, extus testaceo-marginatis; ♂ palporum partis tarsalis procursu *apice fisso*, lacinia anteriore minore, unco bulbi valde compresso et lato, acie ejus anteriore (breviore) in medio dente lato prædita, appendice bulbi anteriore a latere anteriore visa fere T-formi. — Long. corporis c:a 5, cephalothoracis 1—¹/₄ millim.

1) Conf. BLACKWALL's and SIMON's figures of the male's palpi, locis cit.!

- Syn.: ?1763. ARANEA PLUCHII SCOP., Entom. Carniol., p. 404.
 1783. „ OPILIONOIDES SCHRANCK, Enum. Ins. Austr., p. 530.
 ?1834. PHOLCUS PHALANGIOIDES [PHALANGOIDES] HAHN, Die Arachn., II,
 p. 34, Taf. L, fig. 119 (*ad part.*).
 1838. „ OPILIONOIDES C. KOCH, *ibid.*, IV, p. 95, Tab. CXXXV,
 fig. 311.

SCOPOLI says (*loc. cit.*) of his *Aranea Pluchii*: "Maxillæ apice nigræ; abdomen maculis nigris". From these words SIMON has concluded, that *Ar. Pluchii* is identical with *Ar. rivulata* FÖRSK. ¹⁾ or *Pholcus rivulatus* SAV. et AUD. ²⁾. How the expression "abdomen maculis nigris" can furnish any ground for this opinion, or be reconciled with the very good description extracted by SIMON from SAVIGNY or WALCKENAER of the abdomen in *Ph. rivulatus*, in which description nothing is said about black spots, I cannot imagine: the pattern is in fact formed by *whitish* points on a darker bottom, whereas both in *Ph. phalangioides* and in *Ph. opilionoides* C. KOCH the abdomen is of a pale colour with blackish spots or streaks. And as for "maxillæ apice nigræ", this phrase proves nothing, for SCOPOLI by the word "maxillæ", in the case of spiders, means the *mandibles*, as may be seen by his description of *Phalangium opilio* ³⁾ immediately following that of *Ar. Pluchii*. The *maxillæ* of *Ph. opilionoides* C. KOCH are *blackish with a pale external border*, and might accordingly with about as much or as little reason be said to be *apice nigræ* as the *maxillæ* of *Ph. rivulatus*, which according to SIMON are *white with black borders* (in my specimens they are *entirely black or brown*). SIMON states, that *Ph. rivulatus* is as common as *Ph. phalangioides* (*Ph. opilionoides* SIM.) in *Carinthia*, where SCOPOLI had captured his *Aran. Pluchii*; but he does not mention the grounds on which he bases this assumption. I for my part, until the contrary be proved, assume as most probable, that the *Pholcus*-species which is the commonest, perhaps the only one met with, in the rest of south-eastern Germany ⁴⁾, is so also in *Carinthia* — and that species is *Ph. opilionoides* (SCHRANCK), C. KOCH (*non* SIM.). But as I have not

1) FÖRSKÅL, Descript. Anim., p. 86; Icones rer. natur., p. 7, Tab. XXIV, fig. F.

2) Descr. de l'Égypte (Éd. 2), XXII, p. 358; Atlas: Arachn., Pl. III, fig. 12.

3) "Maxillæ ut in Araneis, sed binis dentibus terminatæ *instar chelæ*". (SCOP., *loc. cit.*)

4) The limits of what may be called Germany are at the present moment not very clearly defined, and I therefore ought perhaps to inform may readers, that I here include under that name all the countries which belonged to the late German Confederation, together with Prussia proper: I therefore reckon as belonging

seen any *Pholcus*-specimens from Carinthia, and cannot prove my opinion, I dare not now give this spider the name of *Pholcus Pluchii* (Scop.), but call it *Ph. opilionoides* (SCHRANCK).

The measures given by SCHRANCK of his *Ar. opilionoides*, show in fact that C. KOCH has rightly identified that species. HAHN's synonym, on the contrary, is very uncertain; his figure and description are certainly not taken from living specimens of the German *Ph. opilionoides*, but from an old and badly preserved specimen of some foreign *Pholcus* (perhaps *Ph. phalangioides*), which he confounds with the former.

Pholcus impressus C. KOCH ¹⁾ is in my opinion the male of *Ph. rivulatus* (FORSK.). The two forms are recognized, according to SIMON's description of the former and C. KOCH's of the latter, by the sternum being black (as is also stated by SAVIGNY) and the belly having a broad black central band. It appears to me also probable, that *Ph. barbarus* LUCAS ²⁾ from Algeria is identical with *Ph. rivulatus*: in the female also of this latter form the sternum has a strong conical protuberance behind — a feature which LUCAS supposed to belong only to the ♀ of *Ph. barbarus*. The male, or "*Ph. impressus*", which C. KOCH has described, is unknown to me; the female, of which I have, through the kindness of Prof. CANESTRINI, received specimens from Venice (under the name of *Ph. impressus*), and which I have also myself met with in northern Italy, is distinguished not only by the above-mentioned protuberance on the sternum, but also by the peculiar form of the palpi, which are thickened towards the extremity, with the last joint almost pear-formed and pointed (just as in *Ph. barbarus*, according to LUCAS!). — SIMON has (loc. cit., p. 121, Pl. 2, fig. 10) mentioned imperfectly developed specimens of a *Pholcus* from France, which he calls *Ph. grossipalpus*, and the palpi of which appear greatly to resemble those of *Ph. rivulatus* or *impressus* ♀.

A few words on the geographical distribution of *Ph. opilionoides* and *Ph. phalangioides* may here be not out of place ³⁾. Of *Ph. opilionoides* (SCHRANCK) NOB. I have many specimens, which I have collected partly in northwest Germany (Pyrmont), partly in Bavaria, to Germany the Austrian German provinces, but not those which by Prussia and its allies have lately been torn from their northern and western neighbours.

1) Die Arachn., IV, p. 99, Taf. CXXXVII, fig. 313.

2) Explor. de l'Algérie, Arachn., p. 237, Pl. XV, fig. 1.

3) Compare VAN HASSELL's interesting memoir: Studien over den *Pholcus opilionoides*, in Tijdschr. voor Entom., 2 Ser., V, p. 14—16; Études sur le *Pholcus opilionoides*, in Archives Néerlandaises, V (1870), p. 14—17.

where C. KOCH also met with the species; I have found them sometimes in houses, sometimes at a considerable distance from human dwellings (e. g. in a heap of stones in a wood near Kissingen). From *Austria*, where the species was first met with by SCHRANCK, I have specimens kindly given me by Mr L. v. KEMPELEN of Vienna, who had found them under stones far from houses. It is this species, that according to ZIMMERMANN ¹⁾ is common at Niesky in *Silesia*. The species is then spread over almost the whole of Germany ²⁾, at least at far as 52° north latitude; it is also found in *Poland* ³⁾, and although rarely, south of the Alps, in the Canton *Tessin* in *Switzerland*, and in *Lombardy* ⁴⁾. — *Ph. phalangioides* (FUESSL.) NOB. on the contrary has not, as far as I am aware, been met with in Germany north of the Alps (in southern *Tyrol* it is already met with at Meran and Villanders, according to AUSSERER ⁵⁾). It appears to have its home chiefly in the lands around the Mediterranean, just as *Ph. rivulatus* FORSK.; in our part of the world it is spread over its more southerly and westerly countries. In the whole of southern Europe (southern Russia, Greece, Italy, Spain) it seems to be common: I have myself taken it at Rome and in northern Italy, as also at Nice. In *France* it appears to be the commonest, but probably not the only species occurring, and it is also found in the southern (and western?) parts of *Switzerland*. It is also this species, that has been found by VAN HASSELT (loc. cit.) to belong to the Fauna of the *Netherlands* ⁶⁾.

1) Die Spinnen d. Umgeg. v. Niesky, in Abhandl. d. Nat.-forsch. Gesellschaft. zu Görlitz, Bd. XIV, p. 32. — Dr ZIMMERMANN has had the kindness to send me specimens of both sexes of his *Pholcus opilionoides*.

2) In the extreme north of Germany it seems to be absent. I have not met with it at Travemünde, nor is it mentioned by OHLERT as found in Königsberg, nor by MENGE as inhabiting Danzig. — In a list of Spiders from the neighbourhood of Münster in *Westphalia*, communicated to me by Mr F. KARSCH, no *Pholcus* is mentioned as found in that locality.

3) L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Galiziens, p. 6.

4) Vide PAVESI, in Notizie chim.-agron. della provincia di Pavia, p. 109; CANESTRINI e PAVESI, Aran. Ital., p. 65, 97.

5) Die Arachn. Tirols, I, p. 151.

6) I have sent specimens of both *Ph. opilionoides* and *Ph. phalangioides* to Dr VAN HASSELT, who writes me that the latter is identical with his *Ph. opilionoides*, and that he has not yet observed the former species in the Netherlands. A male palpus of *Ph. opilionoides* v. HASS., which Dr VAN HASSELT also sent me, showed at once that it had belonged to the true *Ph. phalangioides*.

I make use of this opportunity to express to Dr VAN HASSELT my deep thankfulness for the friendly communications, with which he has several times honoured me.

According to BLACKWALL, it is met with in southern and western England: LEACH ¹⁾ even says that "it is very common in the west of England". The only instances of its appearance in *Scandinavia* are the specimens taken by WESTRING in Göteborg, but which have doubtless been brought thither from warmer countries; the same must be the case with that, which SIEMASCHKO ²⁾ captured ad St Petersburg — provided it belongs to this species. VAN HASSELT even considers, and on good grounds, that *some* of the specimens he has obtained in the great maritime towns of Holland, were importations from abroad. — The species is found in Egypt and Algeria, in the Island of St Helena ³⁾, and even in the East Indies (as in Java and Amboyna, where DOLESCHALL ⁴⁾ says it is common), and, according to BLACKWALL ⁵⁾, in Canada. VON FRAUENFELD ⁶⁾ found the "*Ph. nemastomoides* C. Koch" on board the Novara Frigate during her voyage from Rio Janeiro to Canton. — Several other "habitats" are indeed mentioned by different authors for "*Ph. phalangioides*" or "*opilionoides*"; but it is not possible to know which species they speak of ⁷⁾.

1) The Edinburg Cyclopaedia, conducted by BREWSTER, VII, p. 424 (Art. Crustaceology).

2) Verzeichn. der in der Umgeg. von St. Petersburg gefund. Spinnen, in *Horæ Soc. Entom. Ross.*, Fasc. I, p. 129.

3) CAMBRIDGE, Notes on some Spiders and Scorpions from St. Helena etc., in *Proceed. of the Zool. Soc. of London*, 1869, p. 533.

4) Tweede Bijdrage tot de Kenn. d. Arachn. van d. Indischen Archipel, in *Acta Soc. Scient. Indo-Neerland.*, V, p. 47.

5) Notice of Spid. captured by POTTER in Canada, in *Ann. of Nat. Hist.*, XVII, p. 77.

6) Zool. Miscellen, XI, 1: Das Insektenleben zur See, in *Verhandl. d. Zool.-bot. Gesellsch. in Wien*, XVII (1867), p. 461 (37).

7) Mr L. VON KEMPELEN has given me specimens of a *Pholcus* from Hungary (the Banat), which, as it seems to be new to science, may be here noticed: I call it *Ph. Forskålii*, in memory of the celebrated Swedish traveller and Naturalist P. FORSKÅL, who died at Jêrin in Arabia, 1763, at the age of 27 years.

Pholcus Forskålii n. cephalothorace sub-orbiculato, impressionibus cephalicis et fovea media profundis, cum mandibulis, palpis pedibusque rufescenti-testaceo; patellis ut et annulo versus apicem femorum tibiaeque nigricantibus; sterno et maxillis lätius vel fuscus testaceis; abdomine brevi, sub-globoso, paullo tantum longiore quam latiore.

Feminae sternum postice laeve, tuberculo carens; palpi versus apicem non incrassati, parte patellari paullo longiore et angustiore quam tibiali, hac apicem versus sensim acuminata; vulva ex area magna convexa fusca, triangula vel fere semi-circulari constans, apertura postica magna transversa hianti; *maris* mandibulae in latere exteriori (supra), versus apicem, dente maximo, forti armatae; *femora*

(Pag. 298.) FAM. III. DRASSIDÆ [= *Tubitelariæ* NOB.
+ *Laterigradæ* NOB. ad part.].

Vid. THOR., On Eur. Spid., p. 109 et seq.

(Pag. 299.) I. SEGESTRIA [= *Segestria* LATR. 1804].

See THOR., loc. cit., p. 154.

(Pag. 299.) *1. *S. bavarica* [= *Segestria bavarica* C. KOCH 1843].

Syn.: 1843. SEGESTRIA BAVARICA C. KOCH., Die Arachn., X, p. 93, Taf. CCCLI,
fig. 818.

(Pag. 300.) 2. *S. senoculata* [= *Segestria senoculata* (LINN.) 1758].

Syn.: 1758. ARANEA SENOCULATA LINN., Syst. Nat., Ed. 10, I, p. 622.

1805. SEGESTRIA „ WALCK., Tabl. d. Aran., p. 48.

1831. „ „ HAHN, Die Arachn., I, p. 6, Taf. I, fig. 2.

1839. „ „ C. KOCH, ibid., V, p. 75, Taf. CLXIV, fig. 388.

1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 374, Pl.
XXVIII, fig. 270.

ejus 4 anteriora subtus serie aculeorum 30–40 instructa, longitudine diametrum femoris non superantium; palporum pars femoralis diametro circiter duplo longior, patellaris brevis, supra vix longior quam latior, tibialis magna, crassa, a latere visa ovata, desuperne visa angustior; pars tarsalis haud longior quam latior, convexa, latere interiore oblique rotundato-truncato: ex latere exteriori exit procurus, primum anteriora versus et paullo deorsum, tum anteriora versus et paullo sursum et foras directus, longus et fortis valde, sed non apicem versus gradatim dilatatus, desuper visus versus medium intus paullo angustatus, ad apicem intus late et oblique truncatus, ipso apice obtuso dentibus 2–3 parvis munito, subtus paullo ante medium sub-geniculatum aculeis duabus longis, supra vero, ut ipsa pars tarsalis apice, pilis nonnullis longioribus præditus; bulbus maximus, globosus, non apici partis tarsalis, sed sub latere ejus interiore affixus, subtus in latere interiore unci armatus duobus fuscis, ad basin in laminam communem concretis, quorum posterior magis compressus est et postice fortiter dilatatus, introrsum sursumque sub-curvedus, alter vero angustior, introrsum et deorsum directus. — Long. corporis ca 4½, cephalothoracis long. et lat. ca 2, long. abdominis ca 2½, lat. ejus 2 millim.; pedum longitudo in ♀ una: 1:mi paris 36½, 2:di 26, 3:tii 20, 4:ti 23½ millim. — Abdominis color in exemplis paucis a me visis, in spiritu vini asservatis, deperditus: fuscum videtur fuisse, fasciis vel maculis testaceis.

Patria: Hungaria (L. v. KEMPELEN).

Aran. senoculata FABR. ¹⁾ and SCHRANCK ²⁾ is, as is well known, = *Epeira cucurbitina* (CLERCK) ³⁾; the *Ar. senoculata* of CIRILLO ⁴⁾ is according to CANESTR. and PAVESI ⁵⁾ the same species as *Meta segmentata* (CLERCK).

(Pag. 301.) II. **DYSDERA** [= *Harpactes* TEMPLETON 1834].

Of the genera *Dysdera* and *Harpactes*, vid. THOR., On Eur. Spid., p. 157.

(Pag. 302.) 1. **D. Hombergii** [= *Harpactes Hombergii* (SCOP.) 1763].

Syn.: 1763. ARANEA HOMBERGII SCOP., Ent. Carn., p. 403.

1830. DYSDERA „ WALCK., Faune Franç., Arachn., p. 186.

1832. „ LATREILLII BLACKW., Descr. of a spec. of Arachn., in Lond. and Edinb. Phil. Mag., 3th Ser., I, p. 190.

1834. „ TEMPLETONII VIGORS, in TEMPLET., On the Spid. of the gen. Dysdera (Zool. Journ., V, p. 402).

1834. „ GRACILIS REUSS, Zool. Misc., Arachn., p. 195 (200), Pl. XIV, fig. 1.

1843. „ HOMBERGII C. KOCH, Die Arachn., X, p. 95, Taf. CCCLI, figg. 819, 820.

1847. „ HARPACTES WALCK., H. N. d. Ins. Apt., IV, p. 380.

1850. „ HOMBERGII DOBL., Monogr. d. Spinnen-geschl. Dysdera, in Verhandl. d. zool.-bot. Gesellsch. in Wien, III, p. 120.

1864. „ „ BLACKW., Spid. of Gr. Brit., II, p. 371, Pl. XXVIII, fig. 268.

An English male specimen of *D. Hombergii* BLACKW., which I have received of CAMBRIDGE, perfectly agrees with a German speci-

1) Syst. Ent., II, p. 426.

2) Fauna Boica, III, I, p. 234.

3) What six-eyed (?) spider can FABRICIUS mean by his *Ar. scopulorum* (Reise n. Norwegen, p. 317)? Concerning this spider, which he found at Waldershög in Norway, in the beginning of August, he says loc. cit.: "Unter den Felstenstücken und in den Ritzen derselben fand ich eine mir noch völlig unbekannte Spinne. Sie bewachte hier ihren Eiersack, von welchem man sie kaum zu vertreiben im Stande war. — *Aranea scopulorum* oculis senis approximatis; abdomine fusco; linea dorsali pinnata alba. Media. Caput nigrum, nitidum, immaculatum. Mandibulæ magnæ atræ: oculi tantum sex et valde approximati, abdomen acutum fuscum linea dorsali pinnata alba. Pedes testacei fasciis aliquot fuscis".

4) CYRILLUS, Entom. Neap. Spec. I, Tav. VIII, fig. 7.

5) Aran. Ital., p. 51.

men in my collection from the neighbourhood of Nürnberg, which has been examined by WESTRING and by him declared identical with the spider he has here described. — WALCKENAER cites under *D. Hombergii* "*D. scalaris* C. KOCH" (HERR.-SCHAEFF., Deutschl. Ins., 134, 23, which Number I have not been able to consult). In "Die Arachniden" C. KOCH nowhere mentions this *D. scalaris*.

Dysdera parvula DUF. 1820 ¹⁾, generally cited under this species, is probably another spider. The mandibles in DUFOUR's figure of *D. parvula* ²⁾ are much longer than in *D. Hombergii*, and the genital bulb of this last is not so simple as it seems to be in DUFOUR's spider, in which it is "terminé par une seule pointe, sans crochet". In *D. Hombergii* the genital bulb is inversely oviform (fixed with its smaller end), and at the free extremity again somewhat produced and irregularly dilated, and there provided with a long fine curved spine; seen in a certain position it resembles a vase or jug, of which the above mentioned spine forms the handle.

Dysdera punctata C. KOCH 1839 ³⁾ of which I have taken several individuals at Nice, and which WALCKENAER (H. N. d. Ins. Apt., II, p. 445) and BLACKWALL refer to *D. Hombergii*, is an entirely different species: it does not even belong to the genus *Harpactes*, but to *Dysdera* sens. strict.

It seems to me but little probable, that *D. lepida* C. KOCH ⁴⁾ is only a variety of *D. Hombergii*, as WALCKENAER loc. cit. supposes, and as even DOBLIKA considers probable, although he enters it as a separate species (loc. cit., p. 121). KOCH's description of the eyes, mandibles, abdomen etc. of *D. lepida* — to say nothing of the colour — appears to me irreconcilable with that supposition.

(Pag. 303.) III. TEGENARIA [= *Tegenaria* (LATR.) 1804].

Vid. THOR., On Eur. Spid., p. 129.

(Pag. 304.) 1. *T. atrica* [= *Tegenaria atrica* C. KOCH 1843].

Syn.: 1843. TEGENARIA ATRICA C. KOCH, Die Arachn., X, p. 105, Taf. CCCLIII, fig. 825.

1) DUFOUR, Observ. s. quelques Arachn. quadrupulm., in Ann. gén. d. Sc. Phys., V, p. 115.

2) DUFOUR, Descr. et fig. de quelques Aran. nouv. ou mal connues, in Ann. d. Sc. Nat., XXII, (1831) p. 370, Pl. 11, fig. 4.

3) Die Arachn., V, p. 84, Taf. CLXVII, figg. 395, 396.

4) Ibid., p. 85, Taf. CLXVII, fig. 397.

1844. *TEGENARIA SÆVA* BLACKW., Descr. of some newly disc. spec. of Aran.,
in Ann. and Mag. of Nat. Hist., XIII, p. 179.
1861. „ *ATRICA* ID., Spid. of Gr. Brit., I, p. 165, Pl. XI, fig. 106.

Philoica advena C. KOCH (Die Arachn., VIII, p. 57, Taf. CCLXVIII, f. 633) from Laibach (Krain), judging from KOCH's figures, looks extremely like a young *Teg. atrica*, but is, according to CANESTRINI and PAVESI (Aran. Ital., p. 67), who have met with the male full grown, a distinct species of the genus *Tegenaria*.

(Pag. 307.) 2. ***T. domestica*** [= *Tegenaria domestica* (CLERCK) 1757].

- Syn.*: 1757. *ARANEUS DOMESTICUS* CLERCK, Sv. Spindl., p. 76, Pl. 2, tab. 9, fig. 1
(*descr. ad part. et figura totius araneæ*).
1804. *ARANEA FERRUGINEA* PANZ., Syst. Nomencl., p. 244 (SCHÆFF., Ic.
Ins. Ratisb., III, Tab. CCXXVII, fig. II).
1804. „ *SUB-PILOSA* ID., ibid. (SCHÆFF., loc. cit., fig. III).
1805. *TEGENARIA DOMESTICA* WALCK., Tabl. d. Aran., p. 49.
1832. *AGELENA* „ SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.
f. 1831, p. 125.
1834. *ARANEA STABULARIA* C. KOCH, in HERR-SCHÆFF., Deutschl. Ins.,
125, 13 (*sec. C. KOCH, Die Arachn.*).
1837. *PHILOICA DOMESTICA* ID., Uebers. d. Arachn.-Syst., 1, p. 13.
1841. *TEGENARIA* „ ID., Die Arachn., VIII, p. 25, Taf. CCLX,
figg. 607, 608.
1841. „ *PETRENSIS* ID., ibid., p. 27, Taf. CCLX, fig. 609.

In my Rec. crit. Aran., p. 36, I have endeavoured to show that this species, which was confounded by CLERCK with the following, *T. civilis* (WALCK.), WESTR., or *T. Derhamii* (SCOP.), ought to retain the specific name *domestica*, which was employed by LINNÆUS for *T. civilis*. — *T. domestica* BLACKW. ¹⁾ is not = *T. domestica* (CLERCK), WESTR., but is the same species as *T. Guyonii* GUÉR. 1837 ²⁾ or *T. intricata* C. KOCH 1841 ³⁾. Through the kindness of Mr CAMBRIDGE I have been enabled to compare an English ♂ *ad.* of *T. domestica* BLACKW. with a *T. intricata* ♂ *ad.* from Greece (one of C. KOCH's type-

1) Spid. of Gr. Brit., I, p. 163, Pl. XI, fig. 105.

2) GUÉRIN-MÉNEVILLE, Iconogr. du Règne Anim., Arachn., p. 7, Pl. 2, fig. 1. — Among the marks given by GUÉRIN, whereby *T. Guyonii* may be distinguished from *T. domestica*, "l'absence de poils à ses pattes" is of course only the consequence of the hairs in GUÉRIN's specimen having been rubbed off.

3) Die Arachn., VIII, p. 29, Taf. CCLXI, fig. 610, 611.

specimens), which I have received from Dr L. Коч; and I have found that they are alike in every respect. The real *T. domestica* and *T. intricata* certainly much resemble each other, but may nevertheless be distinguished without difficulty: the latter is not only larger than *T. domestica*, but has also comparatively *much longer legs*. In *T. domestica* ♀ the 1st pair is not more than *four* times the length of the cephalothorax, in *T. intricata*, judging from a specimen which I met with at Nice (and also according to the statement of C. Коч), *five* times. In both the Greek and English specimens of *T. intricata* ♂ the first pair of legs is $8\frac{1}{2}$ times as long as the cephalothorax, in *T. domestica* ♂ *ad.* not fully 6 times that length. (In a ♂ *jun.* of *T. intricata*, that I captured at Florence, the cephalothorax is 8 millim. and the 1st pair of legs 47 millim. long, accordingly the legs longer than in ♀, but considerably shorter than in the fullgrown male). The palpi, especially their last joint, are in the ♂ of *T. intricata* much slenderer than in *T. domestica* ♂. In this last, the tibial joint is only *double* as long as it is broad, the tarsal joint or lamina *bulbi* tapering and pear-formed, *broader* than the mandible (about $1\frac{1}{2}$ millim. broad nearer the base and about $3\frac{1}{2}$ millim. long); the long, compressed appendage, that runs parallel to the lamina, under the bulbus, reaches with its anterior extremity *almost to the extremity* of the lamina (the distance is less than a millimètre). In *T. intricata* or *Guyonii*, on the contrary, the tibial joint is *three* times as long as it is broad, the lamina *not* so broad as the mandible (circa 1 millim. broad and 3 millim. long.): the appendage under the bulbus reaches with its anterior extremity only *to about the middle* of the lamina. (Compare BLACKWALL's figure of the male's palpus in his *T. domestica*).

WALCKENAER and others, who believe that *Ar. domestica* LINN. is the same as *Teg. domestica* WALCK., C. KOCH, are widely mistaken. Only a *single* specimen of this last mentioned species, that namely, which was *figured* by CLERCK, has hitherto been found in the northern or central parts of Sweden: here in Upsala, where LINNÆUS lived and taught, during my whole residence of 22 years I have never once met with it, whereas *T. civilis* is here plentiful. *T. domestica* is not, as SUNDEVALL (loc. cit.) supposed, common over the *whole* of Sweden, but at most only in the southern and perhaps some of the western provinces ¹).

1) *T. domestica* (CLERCK) has not been found either in Finland by v. NORDMANN (see his "Erstes Verzeichn. etc.", p. 22), nor in the Russian Baltic Provinces by GRUBE (Verzeichn. d. Arachn., Liv-, Kur- u. Ehstl., p. 443 (29)).

C. KOCH erroneously classes *Agalena domestica* SUND. under his *T. campestris* ¹⁾ = *T. agrestis* WALCK. 1802, a species, which, as far as I am aware, has never yet been observed in Sweden. — *T. petrensis* C. KOCH is no doubt only a variety of *T. domestica*, as KOCH himself considered most probable.

(Pag. 307.) 2. *T. civilis* [= *Tegenaria Derhamii* (SCOP.) 1763].

- Syn.: †1757. ARANEUS DOMESTICUS CLERCK, Sv. Spindl., p. 76, Pl. 2, tab. 9, fig. 2 (*descr. ad part. et fig. palpi maris*).
 1758. ARANEA DOMESTICA LINN., Syst. Nat., Ed. 10, I, p. 620.
 1763. „ DERHAMII SCOP., Entom. Carn., p. 400.
 ?1775. „ LONGIPES FUSSL., Verzeichn. Schweitz. Ins., p. 61.
 1776. „ „ SULZER, Gesch. d. Ins., p. 253, Tab. XXIX, fig. 12.
 1802. „ CIVILIS WALCK., Faune Par., II, p. 216.
 1805. TEGENARIA CIVILIS ID., Tabl. d. Aran., p. 49.
 1832. AGELENA „ SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 127.
 1834. TEGENARIA DOMESTICA C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 125, 21, 22 (*sec. C. KOCH, Die Arachn.*).
 1841. „ CIVILIS ID., Die Arachn., VIII, p. 37, Taf. CCLXIV, figg. 618, 619.
 1861. „ „ BLACKW., Spid. of Gr. Brit., I, p. 166, Pl. XII, fig. 107.

That *Ar. domestica* LINN., as well as *Ar. domestica* DE GEER ²⁾, is identical with this, and not with the preceding species, *T. domestica* (CLERCK), C. KOCH, WESTR., as was already observed by e. g. SUNDEVALL and C. KOCH, ought not at the present time to be doubted by at least any *Swedish* arachnologist. (On this subject see the preceding species, as also THOR., Rec. crit. aran. p. 83). To this species, *T. civilis*, the *Ar. domestica* of many other older writers, as FABRICIUS ³⁾, O. F. MÜLLER ⁴⁾, SCHRANCK ⁵⁾ and CEDERHJELM ⁶⁾, also

1) Die Arachn., VIII, p. 34, Taf. CCLXIII; figg. 615, 616. — In *T. agrestis* or *campestris*, which is considerably smaller than *T. domestica*, the bulbus of ♂ is without the fine downward pointing spine on the inner side of the base, which distinguishes *T. domestica*. The anterior central eyes are something smaller than the others, the anterior side-eyes perhaps the largest.

2) Mém. pour servir à l'Hist. d. Ins., VII, p. 264, Pl. 15, figg. 11, 12.

3) Syst. Entom., p. 433.

4) Fauna Ins. Fridrichsd., p. 93; Zool. Dan. prodr., p. 192.

5) Enum. Ins. Austr., p. 527; Fauna Boica, III, I, p. 230.

6) Faunæ Ingricæ Prodr., p. 192.

appears to me to belong, although some of them have perhaps confounded the two species with each other. The lists of synonyms which some writers, e. g. LUCAS ¹⁾, have given for these so often confounded species, and in which one finds the "*Ar. domesticā*" of almost all the old arachnologists referred to *Tegenaria domestica* (CLERCK), are therefore far from being free from errors. LUCAS also classes under *T. domestica*, LISTER's "*Tit. XVII*", which in LISTER's work ²⁾ is called "*Araneus subflavus, hirsutus, praelongis pedibus, domesticus*" — not "*Ar. domestica*", as LUCAS states. BLACKWALL on the contrary rightly refers this LISTER's spider to *T. civilis*; the specimens however of which LISTER says: "*vetustate fiunt facile omnium multo grandiores, ut araneorum monstra videantur*", have probably belonged either to *T. atrica* or *T. Guyoni* (*T. domestica* BLACKW.).

It seems to me particularly astonishing, that *Ar. Derhamii* SCOP. should so often have been referred to *T. domestica*, and not to *T. civilis*; the statement: "*habitat in domibus rete struens in angulis cubilium et circa fenestras*", may, it is true, be equally applicable to both species, as perhaps also the expression, that "it is known to every body" (which SCOPOLI renders by the Horatian phrase: "*lippis tonsoribusque nota*"); but the description: "*pallide fusca aut rufescens, hirsuta, abdomine ovato, fusco-maculato*", evidently agrees only with *T. civilis*, and I have therefore been unavoidably obliged to restore to that species the oldest previously vacant specific name, by which I have found it described.

As regards *Ar. longipes* FUESSL., FUESSLIN has not described that species. When he cites as a synonym SCOPOLI's *Aranea (Pholcus) Pluchii*, this is evidently a mistake, for he himself, on the same page (N:o 1209) takes up a *Pholcus*, "*Ar. phalangoides*". That *A. longipes* is a *Tegenaria*, is evident from his second citation: PETIVER, *Gazophylacium Naturæ et Artis*, Tab. 77, fig. 14 (Vol. II, Dec. 7 et 8): the spider there figured by PETIVER, and which he (Catal. class. et top. Vol. II^{di}) calls "*A. domesticus max. pedibus longiss. hirsutus*", is evidently the male of a *Tegenaria*, probably of *T. Guyonii* GUÉR. (*T. domestica* BLACKW.). FUESSLIN's statement, that his *Ar. longipes* is met with "*zu Genf, hinter Schränken und Bettstellen etc. nich selten*", seems to me to indicate, that he had *T. Derhamii* before him. — SULZER, who under his *Ar. longipes*, also found in Geneva,

1) Note monogr. sur les Aran. composant le genre *Tegenaria*, in Ann. de la Soc. Entom. de France, 2 Sér., II, p. 461 et seq.

2) Hist. Anim. Angl. tres Tract. Unus de Aran. etc., p. 59.

adduces FURSSLIN's species of the same name, and has copied his citations, has given a figure of this spider, which appears to me undoubtedly to represent *T. civilis* or *Derhamii*. C. KOCH however ¹⁾ takes up FUESSLIN's and SULZER's *Ar. longipes* among the names of an entirely different spider, *T. longipes* C. KOCH (*T. cubicularis* ID., in HERR.-SCHAEFF., Deutschl. Ins., 125, 12, = *T. murina* WALCK. 1802?), which is said to be from southern Switzerland and northern Italy, and which, judging from KOCH's figure, is much less like *Ar. longipalpis* SULZ., than is *T. Derhamii*.

Ar. longipes VILL. ²⁾ is a spider unknown to me. — *Ar. longipes* FABR. ³⁾ from "Australasia" is a *Nephila*.

According to BLACKWALL ⁴⁾, *T. Derhamii* is met with also in N. America (Canada).

(Pag. 308.) AGELENA [= *Agalena* WALCK. 1805].

Vid. THOR., On Eur. Spid., p. 132

(Pag. 309.) 1. *A. labyrinthica* [= *Agalena labyrinthica* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS LABYRINTHICUS CLERCK, Sv. Spindl., p. 79, Pl. 2, tab. 8.
 1758. ARANEA LABYRINTHICA LINN., Syst. Nat., Ed. 10, I, p. 620.
 1758. " RIPARIA ID., ibid.
 1763. " ROESELII SCOP., Ent. Carn., p. 395.
 ?1790. " LILIGERA ROSSI, Fauna Etrusca, II, p. 130.
 ?1805. AGELENA LABYRINTHICA WALCK., Tabl. d. Aran., p. 51 (*ad part.*).
 1832. " " SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 129.
 1834. " " HAHN, Die Arachn., II, p. 61, Taf. LXV, figg. 150, 151.
 1861. " " BLACKW., Spid. of Gr. Brit., I, p. 152, Pl. X, fig. 97.

Ar. riparia LINN. is the young of *Ar. labyrinthica*: vid. THOR., Rec. crit. Aran., p. 84. — The nearly allied *Agalena similis* KEYSER-

1) Die Arachn., VIII, p. 36, Taf. CCLXIII, fig. 617.

2) "Thorax pallide fulvus, lateribus obscurioribus. Abdomen ovatum, luteum, basi punctis nigris, apice fasciis transversis. Pedes longi, tennes, spinosi; 5, 6 breviores. Habitat in Europæ arboribus". DE VILLERS, Car. Linnæi Entom., IV, p. 127.

3) Spec. Ins., I, p. 545.

4) Not. of Spid. captured by POTTER in Canada, in Ann. of Nat. Hist., XVII, p. 76.

LING ¹⁾, which is common in many parts of Germany and Italy, and has probably often been confounded with *A. labyrinthica*, has not hitherto been met with in Sweden. KEYSERLING thinks, that *A. labyrinthica* WALCK. (H. N. d. Ins. Apt., II, p. 20) is = *A. similis*, which WALCKENAER's description of the organs of copulation best suits; it is however very probable that WALCKENAER under the name of *A. labyrinthica* confounded both the species. WALCKENAER cites erroneously among the names of this spider *A. montana* C. KOCH (in HERR.-SCHÆFF., Deutschl. Ins., 125, 11), which according to KOCH himself is the same species as his *Textrix montana* ²⁾, belonging to the genus *Histopona* THOR. ³⁾.

Is the Greek *A. orientalis* C. KOCH ⁴⁾ really a different species from *A. labyrinthica*? A male which I caught at Florence, is considerably larger than my Swedish and German specimens of *A. labyrinthica* — about as large as *A. orientalis* is said to be — but is not specifically different from the former.

(Pag. 310.) V. TEXTRIX [= *Textrix* SUND. 1833].

Vid. THOR., On Eur. Spid., p. 134.

(Pag. 311.) 1. T. LYCOSINA [= *Textrix denticulata* (OLIV.) 1789].

Syn.: 1789. ARANEA DENTICULATA OLIV., Encycl. méth., IV, p. 213.

1804. „ CALOPHYLLA PANZ., Syst. Nomencl., p. 244 (SCHÆFF., Ic. Ins. Ratisb., I, Tab. XLII, fig. XIII).

1832. AGELENA LYCOSINA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 130.

1833. TEXTRIX „ ID., Consp. Arachn., p. 19.

1833. „ AGILIS BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 109.

1) Beschr. neuer Spinn., in Verhandl. d. zool.-bot. Gesellsch. in Wien, XIII, (1863), p. 6, Pl. X, figg. 2, 3. — *Agal. similis* is considerably smaller than *A. labyrinthica*; its cephalothorax is brown with a pale central band and pale edges. The abdomen has along the whole length of the upper part a paler brown band between the oblique whitish grey streaks; the projection under the extremity of the tibial joint, outwards, of the palpi in ♂ is pretty broad, with two teeth at the extremity, not simply pointed as in *A. labyrinthica*. — May not *A. gracilis* C. KOCH (Die Arachn., VIII, p. 59, Tab. CCLXIX, fig. 634) be = *A. similis*?

2) Die Arachn., VIII, p. 53, Taf. CCLXVII, fig. 630.

3) On Eur. Spid., p. 120, 133.

4) Die Arachn., VIII, p. 58, Taf. CCLXIX, fig. 634.

1837. AGELENA MACULLULATA WALCK., H. N. d. Ins. Apt., I, p. 344.
 1841. TETRIX LYCOSINA C. KOCH, Die Arachn., VIII, p. 46, Taf. CCLXVI,
 figg. 623, 624.
 1841. TEGENARIA LYCOSINA WALCK., H. N. d. Ins. Apt., II, p. 15.
 1844. „ FULIGINEA LUC., Note monogr. s. l. Aran. compos. le
 genre Tegenaria, in Ann. de la Soc. Ent.
 de France, 2 Ser., II, p. 468.
 1861. TETRIX LYCOSINA BLACKW., Spid. of Gr. Brit., I, p. 172, Pl. XII,
 fig. 110.

OLIVIER (loc. cit.) has described under the name of *Ar. denticulata* a spider belonging to "les Araignées tapisseries", under which he cites LISTER's "Tit. XX: *Aranens fuliginus et humerorum fastigio et chmium pictura candida*" ¹⁾, a species generally and correctly considered as identical with *Tetrix lycosina* SUND. OLIVIER's own description ²⁾ is very good, and leaves no reason to doubt that his reference to LISTER is correct. I therefore consider myself obliged to restore to the species its oldest name, *denticulata*.

Aranea macullulata DUF. 1831 ³⁾ from Spain, which is cited by f. inst. WALCKENAER and LUCAS under this species, is certainly another; its cephalothorax is stated to be grey, with "une raie noire irrégulière ou comme dentelée de chaque côté de la ligne médiane, et sur ses bords, près de l'origine des pattes, trois ou quatre mouchetures"; its sternum is "marqué de deux lignes noires", the upper part of the abdomen with "mouchetures noirâtres, dont le plus grand nombre est disposé en deux séries longitudinales le long de la ligne médiane" etc. — a description which does not at all agree with the spider before us.

WALCKENAER and LUCAS (loc. cit.) quote under this species *Ar. Ræselii* SCOP., which however certainly does not belong to it, but to *Agalena labyrinthica*. LUCAS also takes up among its synonyms "*Ar. fuliginea* LISTER", and calls it *Teg. fuliginea*. LISTER however knew of no "nomina trivialia" or specific names: *fuliginus* is only

1) Hist. Anim. Angliæ tres Tract. etc., p. 67, Tab. I, fig. 20.

2) "*Aranea fuliginosa, abdomine oblongo-ovato, dorso macula magna denticulata*. Cette espèce est de grandeur moyenne. Sa couleur est d'un noir de suie. Le corcelet est élevé et blanchâtre à sa partie supérieure. L'abdomen est ovale allongé: on y voit une grande tache blanchâtre dont les bords de chaque côté sont dentelés. Elle se trouve en Angleterre et aux environs de Paris". OLIV., loc. cit.

3) DUFOUR, Descr. et fig. de quelques Aran. nouv. ou mal connues, in Ann. d. Sc. Nat., XXII, p. 360, Pl. 10, fig. 2.

the *first word* in his *specific diagnosis*, just as the word *domesticus*, considered by LUCAS to be a specific name, is the *last word* of LISTER'S diagnosis of *Teg. Derhamii*. Vid. above, p. 158. Real *specific names* were first introduced into the science by LINNÆUS, 1751, in his *Philosophia Botanica*, and one cannot therefore, in adducing authority for a specific name, or in deciding questions of priority, go farther back than to 1751, the epoch of the creation of the now exclusively adopted binominal system of nomenclature. (Conf. THOR., On Eur. Spid., p. 7.)

(Pag. 311.) VI. AGRÆCA [= *Agræca* WESTR. 1861].

Vid. THOR., On Eur. Spid., p. 135.

(Pag. 313.) 1. A. linotina [= *Agræca brunnea* (BLACKW.) 1833].

Syn.: 1833. AGELENA BRUNNEA BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 351.

1843. PHILOICA LINOTINA C. KOCH, Die Arachn., X, p. 108, Taf. CCCLIV, fig. 826 (salt. ad part.).

1861. AGELENA BRUNNEA BLACKW., Spid. of Gr. Brit., I, p. 159, Pl. X, fig. 102.

MR CAMBRIDGE has kindly sent me a specimen of *Agel. brunnea* BLACKW., whereby I am assured of the identity of that species with *Agr. linotina* WESTR. — Both in Sweden and in Germany there are two closely allied species of the genus *Agræca*, which it is not easy to distinguish: the one is *Agr. brunnea*, which WESTRING identifies with *Philoica linotina* C. KOCH; the other, which has not yet been specially mentioned, but which may possibly have been by C. KOCH confounded with *A. brunnea* under the denomination of *Philoica linotina*, I call *A. Haglundii* (= *Philæca linotina* THOR., Rec. crit. Aran., p. 109). *A. brunnea* is somewhat smaller than this latter: the cephalothorax in ♀ is $2\frac{1}{2}$ —3 millim. long, tibia + patella of the 4th pair of legs 3 — $3\frac{1}{2}$ millim.; the vulva is composed of 3 small foveæ, close to each other, forming an isosceles triangle, the apex of which is directed backwards. In *A. Haglundii* ♀ the cephalothorax is about $3\frac{1}{2}$ millim., the patella + tibia of the 4th pair about 4 millim. long: the three foveæ, which form the vulva, are somewhat more distant from each other, and the posterior fovea is at a distance from the two anterior greater than the interval between the two latter, and is united with them by a furrow bounded on both sides by a fine,

black, raised edge. In both species the patellar joint of the male's palpi is short, thick, and, when viewed from the side, thicker towards the extremity, almost as broad as it is long, the tibial joint a trifle longer, but slenderer than the patellar, curved slightly downwards, cylindrical: its extremity is on the exterior side produced into a strong dark spine, with the point turned inwards, lying against the clava: the extremity of the tibial joint on the under side forms a short angle (not a sharp, conical tooth, as in a third, nearly allied, English species). In *A. brunnea* the clava is *not broader* than the thighs of the first pair of legs: the bulbus, which at the extremity, inwards, forms a spine directed transversely outward, is at the back part *rounded off*, without any projecting truncated heel. The palpal clava of *A. Haglundii* is *somewhat broader* than the thigh; the bulbus, at the back part, has a *short, broad, truncated process or heel*. In both species the posterior central eyes are larger than, or at least as large as the anterior central eyes; the interval between the lateral eyes is less than between the posterior lateral and central eyes, not larger than an eye's semi-diameter (not, as WESTRING states, equal to an eye's diameter, and to the distance between the posterior lateral and central eyes).

I have been favoured by MENGE with specimens from Danzig both of *A. brunnea* and *A. Haglundii*, and of the latter species v. KEMPELEN has sent me a ♀ from Austria. In Sweden it has been observed only in the neighbourhood of Stockholm. Of *A. brunnea* I have received a Finnish specimen from AL. v. NORDMANN.

(Pag. 315.) VII. HAHNIA [= *Hahnia* (C. KOCH) 1841 + *Cryphæca* THOR. 1870].

On the genera *Hahnia* and *Cryphæca*, vid. THOR., On Eur. Spid., p. 131.

(Pag. 316.) 1. *H. pusilla* [= *Hahnia nava* (BLACKW.) 1841].

- Syn.*: 1841. AGELENA NAVA BLACKW., The differ. in the numb. of eyes etc., p. 623.
 ?1841. HAHNIA PUSILLA C. KOCH., Die Arachn., VIII, p. 61, Taf. CCLXX, fig. 637 (*ad part.*: ♂?).
 1847. ARGUS NAVUS WALCK., H. N. d. Ins. Apt., IV, p. 506.
 1851. HAHNIA PUSILLA WESTR., Förteckn. etc., p. 46.
 1861. AGELENA NAVA BLACKW., Spid. of Gr. Brit., I, p. 158, Pl. X, fig. 101.
 1869. HAHNIA PUSILLA MENGE, Preuss. Spinn., III, p. 252, Pl. 48, tab. 149.
 1870. „ MONTANA THOR., On Eur. Spid., p. 132.

The colour in BLACKWALL'S *Ag. montana*, according both to the descriptions and the figures, appears to me to suit WESTRING'S spider now before us better than does the colour of *Ag. nava* BLACKW., nor has BLACKWALL, as far as I can understand, mentioned any dissimilarity in form between these two species (the statement, that *A. nava* differs from *A. montana* in having only two claws on the tarsi, is of course a mistake), and I therefore accepted (loc. cit.) the name *H. montana* for this spider; but specimens of *A. nava*, with which I have been favoured by CAMBRIDGE, show that *H. pusilla* WESTR. is identical with the last named species, and not with *A. montana*.

As to *Hahnia pusilla* C. KOCH, that species has been made synonymous with three different species: by BLACKWALL with his *A. montana*, by WESTRING and MENGE with the *H. pusilla* of these writers or *Ag. nava* BLACKW., by OHLERT (Aran. d. Prov. Preuss., p. 86) again with a third species, which I conceive to be the real *H. pusilla* C. KOCH, and therefore entitled to retain this name, although it seems to me probable, that C. KOCH had also before him specimens of *Ag. nava* (e. g. the ♂ figured by him, fig. 637) Of *H. pusilla* C. KOCH et OHL., OHLERT has sent me specimens, among which is a ♂ *ad.* This species is smaller than *H. nava* (*pusilla* WESTR.) — KOCH even says of his *H. pusilla*, that it is "the smallest species of spider known" —; its cephalothorax, legs and palpi are of a pale brownish yellow colour, the cephalothorax is without any black side-border, something shorter, but more convex than in *H. nava*: the abdomen is brown or greyish yellow with small transverse, angular, paler stripes. In *H. nava* the cephalothorax is dark, greyish brown with blackish radiating side spots and a black edge; most of the joints of the legs are dark, paler towards the ends, the abdomen blackish or greyish brown with small transverse, angular, pale stripes, which however sometimes are wanting, especially in ♂. In both species the short patellar joint of the male's palpi has on its under side, outwards, a long, slender projection; the still shorter, transverse tibial joint is on the under side, at its extremity, drawn out into a long, fine, almost circularly curved spine, and the bulb is surrounded by a similar, still longer spine, which however often in *H. nava* is only visible when the palpus is pressed. In *H. pusilla* C. KOCH et OHL. ♂ the palpi appear to me shorter than in *H. nava*; the process on the patellar joint is almost straight, as long as the femoral joint, and directed downwards, with a slight inclination backwards, so that, in the usually curved position of the palpus, it lies parallel with that joint; the clava is visibly

thicker than the thigh of the first pair, the lamina as long as the femoral and patellar joints together, almost elliptic, and not narrower towards the apex, scarcely half as long again as it is broad, the bulbus large, brown, somewhat broader towards the apex, somewhat obliquely united with the lamina. In *H. nava* ♂ the process on the patellar joint points almost directly outward, and is bent upwards towards the extremity; it is about as long as the patellar, but shorter than the femoral joint; the clava is scarcely thicker than the thighs of the 1st pair, the lamina not quite so long as the femoral + patellar joints, slenderer towards the extremity, oviform; the bulbus also is oviform.

As regards the real *H. montana* (BLACKW.) 1841¹⁾, it is, according to BLACKWALL, "inconsiderably larger" than *H. nava*: a ♂ specimen of this species in my collection (kindly given me by CAMBRIDGE) is very like a ♂ of *H. nava*, but is somewhat larger and in colour (in which however there is said to be considerable variety) paler, reddish brown: the outward-pointing process on the patellar joint is shorter, coarser and blunter, shorter than the patellar joint itself; the lamina is scarcely longer than the femoral joint.

(Pag. 318) 2. *H. pratensis* [= *Cryphaea arietina* N.].

That *Hahnio pratensis* MENGE (PREUSS. Spinn., III, p. 253, Pl. 48, tab. 150), which is identical with *Agelena elegans* BLACKW. 1841²⁾, is a spider totally different from WESTRING'S *H. pratensis*, the most desultory glance on the descriptions of the male's palpi given by these writers sufficiently demonstrates. The two species are easily distinguished by the following characteristics, which apply to both sexes. In WESTRING'S spider, which is not a *Hahnio*, but a *Cryphaea*, the anterior row of eyes is straight, the anterior central eyes considerably smaller than the anterior lateral, and not larger than the posterior central eyes, and the spinners are disposed in a trapezium. In *Hahnio pratensis* MENGE, or *Agelena elegans* BLACKW., the anterior row of eyes is bent forwards (downwards), the anterior central eyes are largest of all, double as large as the posterior; the long spines under the anterior tibiae and metatarsi in WESTRING'S spider are here absent; the spinners are arranged in a transversal

1) The differ. in the number of eyes etc., p. 622; Spid. of Gr. Brit., I, p. 157, Pl. X, fig. 100.

2) The differ. etc., p. 619; Spid. of Gr. Brit., I, p. 155, fig. 99.

series. I call WESTRING's species *Cryphæca arietina*, with reference to the remarkable palpi of the ♂: the bulbus projects from its apex an upward- and backward-curved spine, at least *as long as the whole of the animal's body* and about as thick as the tarsi; these spines together resemble a pair of ram's-horns, as WESTRING remarks.

Hahnia pratensis C. KOCH 1841 (Die Arachn., VIII, p. 64, Pl. CCLXX, fig. 639) is by BLACKWALL (and MENGE) referred to *Ag. elegans* BLACKW., by WESTRING to his *H. pratensis* or *Cryphæca arietina* NOB. It appears to me probable, that BLACKWALL and MENGE are right; but as this is not quite certain, for KOCH was not acquainted with the male, and says nothing either about the relative size of the eyes or about the spine-armature of the legs, I think it is best to drop KOCH's specific name, and to accept the nearly contemporaneous one of BLACKWALL, and thus to call BLACKWALL's and MENGE's species: *Hahnia elegans* (BLACKW.) 1841.

WESTRING has kindly sent me for examination the only hitherto discovered specimens of his *H. pratensis*; CAMBRIDGE has obligingly given me a ♀ of *H. elegans* from England.

Among some unidentified spiders communicated to me by Prof. CANESTRINI, is a male specimen of a *Cryphæca*, which also is peculiarly remarkable for the structure of its palpi: the lamina bulbi is very large and exhibits, in the upwards turned inner edge, towards the apex, a large and very deep excision, from the bottom of which proceeds a very long and slender process, broadest and lamellar at its base, and curving upwards and backwards, that reaches about to the middle of the tibial joint: above this joint it is met by a long, fine, black spine proceeding from the posterior extremity of the bulbus, at first curving upwards, but immediately afterwards forward, inside the tibial joint, which spine joins the process, lying close to (within?) it; the tibial joint has a blunt tooth near the apex, on the outer side. I call this species *Cryphæca mirabilis* 1).

1) *Cryphæca mirabilis* N. Cephalothorax cum partibus oris, palpis pedibusque luteo-fuscus, summo margine, linea tenui postica media, lineisque utrinque tribus radiantibus, nigris; sternum luteo-fuscum, nigro-marginatum, abdomen nigricans(?); series oculorum anticorum, qui omnes fere contingentes sunt, procurva, multo brevior quam series posticorum; oculi medii antichi multo minores quam reliqui omnes, qui magni sunt et spatio oculi diametrum non æquanti inter se remoti; lamina bulbi maxima, margine interiore (superiore) versus apicem profunde inciso, procursu (lamina quasi angusta) tenui, longissimo ex fundo hujus incisuræ surgenti, sursum et retro curvato, et usque supra mediam partem tibialem pertinenti, ubi cum spina longa, tenui, nigra, ex basi bulbi proveniente, sur-

(Pag. 320.) 3. *H. silvicola* [= *Cryphæca silvicola* (C. KOCH) 1834].

Syn.: 1834. *TEGENARIA SILVICOLA* C. KOCH, in HERR-SCHÆFF., Deutschl. Ins., 125, 16 (sec. C. KOCH, Die Arachn.).

1845. *HAHNIA SILVICOLA* C. KOCH, Die Arachn., XII, p. 158, Taf. CCCCXXXII, figg. 1076, 1077.

1850. *AMAUROBIUS SYLVICOLUS* MENGE, Verzeichn. Danz. Spinn., p. 63.

1861. *TEGENARIA SILVICOLA* BLACKW., Spid. of Gr. Brit., I, p. 168, Pl. XII, fig. 108.

1869. *HAHNIA* „ MENGE, Preuss. Spinn., III, p. 254, Pl. 48, tab. 151.

1870. *CRYPHÆCA* „ THOR., On Eur. Spid., p. 131.

(Pag. 322.) VIII. *APOSTENUS* [= *Apostenus* WESTR. 1851] ¹⁾.

See THOR., On Eur. Spid., p. 141.

(Pag. 322.) 1. *A. fuscus* [= *Apostenus fuscus* WESTR. 1851].

Syn.: 1851. *APOSTENUS FUSCUS* WESTR., Förteckn. etc., p. 46.

1870. „ „ THOR., On Eur. Spid., p. 141.

1870. *ZORA FUSCA* L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Galiziens (Sonderabdruck aus dem XLI Jahrbuche d. k. k. Gelehrten Gesellsch. in Krakau), p. 6²).

sum et anteriora versus curvata, conjungitur; tibiæ et metatarsi 4 anteriores sub-
tus ordinibus binis spinarum longissimarum, appressarum armati. — ♂ *ad.*, long.
ca 2 millim.

Patria: Venetia (CANESTRINI). Specimen unicum masculum vidimus.

1) This and the following genera of WESTRING's *Drassidæ* belong to this family in its more restricted sense (as we limited it in our work "On Eur. Spid.", p. 110), with the exception of *Dictyna*, *Argyroneta* and *Amaurobius*, which we refer to the *Agalenoidæ*, and *Sparassus*, which belongs to the *Thomisoidæ*. The difficulties, which the determination of *Drassoidæ* frequently offers, are known to every arachnologist, and it is evident that similar difficulties must meet us in our endeavours to unravel their synonyms. By the publication of Dr L. KOCH's excellent monography, "Die Arachniden-familie der Drassiden", a good foundation has however been laid for the study of these spiders; and I venture to hope that, through the friendly help I have received from Dr KOCH — he has had the extreme kindness to go through and determine the greater part of my collection of *Drassoidæ* — my synonyms drawn from his work will be found trustworthy. Most of the species which have been, in the next following pages, characterized as new, are also by Dr KOCH considered as hitherto undescribed, and have received names which he has proposed.

2) According to specimens kindly communicated by L. KOCH.

BLACKWALL has not described this species. I have lately received specimens from the neighbourhood of Danzig from MENGE, and from Austria from v. KEMPELEN.

(Pag. 324.) IX. ZORA [= *Zora* (C. KOCH) 1848].

Vid. THOR., On Eur. Spid., p. 140.

(Pag. 325.) 1. *Z. spinimana* [= *Zora maculata* (BLACKW.) 1833].

Syn.: † 1833. LYCÆNA SPINIMANA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 266.

1833. „ [LYCODIA] SPINIMANA ID., Consp. Arachn., p. 22.

1833. HECAËRGE MACULATA BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 193.

1835. DOLOMEDES SPINIMANUS C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 128, 23, 24 (sec. C. KOCH, Die Arachn.).

1837. „ LYCÆNA WALCK., H. N. d. Ins. Apt., I, p. 348.

1848. ZORA SPINIMANA C. KOCH, Die Arachn., XIV, p. 102, Tab. CCCCLXXXI, figg. 1343, 1344.

1851. LYCODIA SPINIMANA WESTR., Förteckn. etc., p. 46.

1851. HECAËRGE „ BLACKW., A Catal. of Brit. Spid. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., VII, p. 399.

1861. „ „ ID., Spid. of Gr. Brit., I, p. 41, Pl. III, fig. 21.

1870. ZORA LYCÆNA THOR., On Eur. Spid., p. 140.

Dolomedes spinimanus DUFOUR 1820 ¹⁾ = *D. Dufourii* WALCK. (loc. cit., p. 258) appears to be a different species of the genus *Zora*: it is said to have the 1st pair of legs longer than the others(?), and the anterior central eyes *smaller* than the anterior lateral, — and it seems then, that the specific name *spinimana* cannot be retained for the spider in question, but ought to be changed for the next following in order of time, *maculata* BLACKW. (not *lycæna* WALCK., as is erroneously said in my above-cited work). The still older names *Dolomedes hippomenes* [*hyppomene*] SAV. et AUD. 1825—27 ²⁾, and *D. errans* DUF. 1831 ³⁾, which WALCKENAER loc. cit. has taken up as synonyms under his *D. lycæna*, certainly do not belong to this spider.

1) Descr. de cinq Arachn. nouv., in Ann. gén. d. Sciences Phys., V, p. 204, Pl. LXXVI, fig. 3.

2) Descr. de l'Égypte (2 Éd.), XXII, Arachn., p. 371, Pl. IV, fig. 9.

3) Descr. et fig. de quelques Aran. etc., in Ann. d. Sciences Nat., XXII, p. 363, Pl. 11, fig. 1.

The male has on the outer side of the extremity of the tibial joint a small *pointed* process; in the very nearly related, but to me unknown *Z. nemoralis* (BLACKW.) 1861 ¹⁾ that process is stated to be *blunt*. CAMBRIDGE says ²⁾ of *Z. nemoralis*, that "it is chiefly distinguishable from *Z. maculata* by its darker colour and by being almost wholly clothed with long, fine, silky hair".

(Pag. 326.) X. PHRUROLITHUS [= *Phrurolithus* (C. KOCH) 1839].

See THOR., On Eur. Spid., p. 145.

(Pag. 327.) 1. Ph. *festivus* [= *Phrurolithus festivus* C. KOCH 1835].

- Syn.*: 1835. MACARIA FESTIVA C. KOCH, in HERR-SCHÆFF., Deutschl. Ins., 129, 15.
 1839. PHRUROLITHUS FESTIVUS ID., Die Arachn., VI, p. 110, Taf. CCVII, figg. 511, 512.
 1854. DRASSUS PROPINQUUS BLACKW., Descr. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., XIII, p. 175.
 1861. " " ID., Spid. of Gr. Brit., I, p. 120, Pl. VI, fig. 74.
 1866. PHRUROLITHUS FESTIVUS L. KOCH, Die Arachn.-fam. d. Drassiden, p. 229, Taf. IX, figg. 148-150.

Of *Drassus propinquus* BLACKW., CAMBRIDGE has sent me English specimens; I have also specimens of this species from France (Paris) sent by SIMON. — In H. N. d. Ins. Apt., I, 624, WALCKENAER takes up (with a note of interrogation) *Mac. festiva* C. KOCH under his *Drassus lugubris*, which rather appears to be identical with *Mac. formosa* C. KOCH or *Micara pulicaria* (SUND.); in Vol. II of the same work (p. 488), he quite erroneously refers it to his *Theridium signatum* or *Asagena phalerata* (PANZ.), SUND.

(Pag. 329.) 2. Ph. *minimus* [= *Phrurolithus minimus* C. KOCH 1839].

- Syn.*: 1839. PHRUROLITHUS MINIMUS C. KOCH, Die Arachn., VI, p. 111, Taf. CCVII, fig. 513.
 1866. " " L. KOCH, Die Arachn.-fam. d. Drassiden, p. 227, Taf. IX, figg. 146, 147.

1) Descr. of sev. recently disc. Spiders, in Ann. and Mag. of Nat. Hist., 3 Ser., VIII, p. 441.

2) Descr. of 24 new spec. of Spiders, in Zoologist, 1863, p. 8597 (37).

Ph. minimus is easily distinguished from the preceding species by the bright rusty yellow or reddish colour of the cephalothorax, and by the process of the tibial joint in the ♂ being *truncated* at the apex, not, as in *Ph. festivus*, notched. A ♀ *ad.* of *Ph. minimus* I captured at Kissingen, and L. KOCH has obligingly given me fully developed specimens of both sexes, also from Bavaria. WESTRING's type-specimen agrees perfectly with my German examples.

SIMON, who considers *Ther. minimum* REUSS or *Th. pallens* BLACKW. (see this species above, p. 85), as belonging to the genus *Phrurolithus*, and accordingly calls it *Phrurolithum minimum*, has rechristened *Ph. minimus* C. KOCH as *Phrurolithum parvulum* (H. N. d. Araignées, p. 468).

(Pag. 330.) XI. MICARIA [= *Micaria* WESTR. 1851].

Vid. THOR., On Eur. Spid., p. 146.

(Pag. 331.) 1. *M. fulgens* [= *Micaria fulgens* (WALCK.) 1802].

- Syn.*: ?1802. ARANEA FULGENS WALCK., Faune Par., II, p. 222.
 1802. „ RELUCENS LATR., H. N. d. Fourmis etc., p. 349.
 1804. „ „ ID., H. N. d. Crust. et d. Ins., VII, p. 225.
 ?1805. DRASSUS FULGENS WALCK., Tabl. d. Aran., p. 46.
 1806. „ RELUCENS LATR., Gen. Crust. et Ins., I, p. 88.
 1834. „ „ HAHN, Die Arachn., II, p. 55, Taf. LXI, fig. 143.
 1835. MACARIA FULGENS C. KOCH, in HERR.-SCHEFF., Deutschl. Ins., p. 129, 14 (sec. L. KOCH).
 1835. „ FASTUOSA ID., ibid., 129, 16 a (sec. L. KOCH).
 ?1837. DRASSUS FULGENS WALCK., H. N. d. Ins. Apt., I, p. 622.
 ?1837. „ FASTUOSUS ID., ibid., p. 624.
 1839. MACARIA FASTUOSA C. KOCH, Die Arachn., VI, p. 92, Tab. CCIII, fig. 498.
 1851. MICARIA FULGENS WESTR., Förteckn. etc., p. 47.
 1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p. 72, Taf. IV, figg. 52—54.
 1867. MACARIA „ OHL., Aran. d. Prov. Preuss., p. 104.

LATREILLE in his above-cited "Hist. Nat. d. Fourmis et Recueil de Mém." etc. has not given any diagnosis of his *Ar. relucens*; he in fact gave none till in 1804, loc. sup. cit., and the name *fulgens* must accordingly be preferred to *relucens*, provided these two names really, as has been generally supposed, indicate the same species. LATREILLE's synonym appears to be perfectly certain; but WALCKENAER's descriptions of his *Drassus fulgens*, both in Faune Française and in H. N.

d. Ins. Apt., are not such, that one can with certainty see, that he meant by them the same species, that WESTRING calls *Micaria fulgens* (WALCK.): one might in fact be rather inclined to deny it. I have however, through the kindness of SIMON, received a specimen of *M. fulgens* WESTR. from the neighbourhood of Paris under the name of "*M. fulgens* (WALCK.)", and that name therefore would seem to have, even in France, prescription in its favour for just the species WESTRING here describes, and of which he has favoured me with specimens of both sexes. As well in these as in a full-grown Swedish ♂ in my collection and in the above-mentioned specimen from Paris, the cephalothorax, on each side behind, has *two black spots*; these are however frequently absent in younger specimens, in which also the legs are brownish or reddish yellow, with only the posterior metatarsi and the anterior tarsi and metatarsi mostly black. In the fullgrown specimens all the tarsi and metatarsi are blackish, and the thighs also, at least the fore ones, darker at the base. The cephalothorax is *not* twice as long as it is broad (the length is about $2\frac{1}{4}$, the breadth $1\frac{1}{2}$ millim. in a ♂ *ad.*). The mandibles are covered with *copper-red scales, having a metallic lustre*. In ♂ *ad.*, the tibial joint of the palpus is *not* fully double so long as broad at the base, and it has *one* little slightly curved tooth just at the apex, on the outer side: the patellar and tibial joints taken together are *somewhat shorter* than the mandibles.

Different from this species, though probably often confounded with it, is *Mic. formicaria* (SUND.) 1832 ¹⁾ (= *Macaria myrmecoides* OHL. ²⁾), and without doubt also = *M. aurulenta* C. KOCH ³⁾). A ♂-specimen, with which I have been favoured by OHLERT, perfectly agrees with a ♂ *ad.*, which I captured at Mem in Östergötland, and with OHLERT's description, loc. cit., to which I beg to refer. A ♀ *jun.* I caught at Stockholm, and specimens of the same species, though males only, were found in the island of Gotland by SUNDEVALL. The male *M. formicaria* (SUND.) is easily distinguished from *M. fulgens* ♂ by the cephalothorax being very nearly *double as long* ($2-2\frac{1}{2}$ millim.) *as it is broad*, of almost uniform breadth; the mandibles are *destitute of the metallic shining scales*, and only covered with hair; they are smaller than in *M. fulgens*, viewed from in front scarcely broader at the base than at the extremity, where they are trans-

1) Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1831, p. 141.

2) Aran. d. Prov. Preuss., p. 105.

3) Die Arachn., VI, p. 94, Taf. CCIII, fig. 499.

versally depressed, and are so curved that they leave between them a long narrow oval interval; the palpi are longer and slenderer than in *M. fulgens*, the tibial joint more than double as long as it is broad at the base, with two small teeth behind each other at the apex, on the outer side; the patellar and tibial joints are together longer than, or at least as long as, the mandibles. The abdomen has across the middle a deep depression (as it also the case in *M. exilis* CANESTR.¹), which seems to be closely related to *M. formicaria*). That it is this species, *M. myrmecoides* OHL., that SUNDEVALL loc. cit. has described under the name of *Chubiona formicaria*, is evident from e. g. the following expression in his description of ♂: "Thorax antice non angustatus, duplo longior quam latior; [palporum] pars tibialis dentibus 2 armata", which is evidently inapplicable to *M. fulgens*, to which, among others, WESTRING and L. KOCH have referred *Cl. formicaria* SUND. (*Chubiona formicaria* is wanting in SUNDEVALL's collection of types). It is clear that the specific name *formicaria* must be restored to *M. myrmecoides* OHL.; for *Drassus formicarius* LUCAS²), or *M. formicaria* L. KOCH³), we propose the appellation *Micaria Lucasii*.

Drassus fastuosus WALCK. is not a spider easy to identify. WALCKENAER in Vol. I of H. N. d. Ins. Apt. takes up as a synonym to it C. KOCH's *Macaria fastuosa*, but in Vol. II, p. 487—488, of the same work he makes *M. fastuosa* C. KOCH identical with his *D. fulgens*, and *M. fulgens* C. KOCH with his *D. fastuosus*. The passage in WALCKENAER last referred to, is however very obscure; perhaps he means *Drassus lugubris* (probably the same as *M. pulicaria* (SUND.), WESTR.) when he says *D. fastuosus*! C. KOCH himself has *M. fulgens* and *M. fastuosa* as different species; his description and figure of the former I have not seen; the latter seems to me to be a *Micaria fulgens* WESTR. et L. KOCH, to which both these C. KOCH's species are referred by L. KOCH. Of the *Mic. fulgens* of L. KOCH and the *Mac. fulgens* of OHLERT, these authors have kindly sent me specimens.

Drassus dives LUC.⁴) and *Dr. fastuosus* LUC.⁵), which WALCKENAER (loc. cit., IV, p. 448) classes, the first under his *D. fulgens*,

1) Nuovi Arachn. Ital., in Annuario della Soc. dei Nat. in Modena, III, p. 192; CANESTR. et PAV., Arachn. Ital., p. 111.

2) Explor. de l'Algérie, Arachn., p. 228, Pl. 14, fig. 4.

3) Die Arachn.-fam. d. Drassiden, p. 69, Taf. III, figg. 49—51.

4) Explor. de l'Algérie, Arachn., p. 220, Pl. 13, fig. 9.

5) Ibid., p. 221, Pl. 13, fig. 10.

and the last under his *D. fastuosus*, do not belong to the genus *Micaria*: the position of the eyes appears to refer them to quite a different generic group, viz. *Gnaphosa* (LATR.), THOR., or *Pythomissa* C. KOCH, to which also LUCAS himself considers them as belonging.

(Pag. 334.) 2. *M. pulicaria* [= *Micaria pulicaria* (SUND.) 1832].

Syn.: 1832. CLUBIONA PULICARIA SUND, Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 140.

1833. DRASSUS NITENS BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 439.

?1837. " LUGUBRIS WALCK., H. N. d. Ins. Apt., I, p. 624.

?1837. MACARIA CORRUSCA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 18.

1839. " FORMOSA ID., Die Arachn., VI, p. 97, Taf. CCIII, fig. 501.

?1839. " GUTTULATA ID., ibid., p. 95, Taf. CCIII, fig. 500.

?1839. " NITENS ID., ibid., p. 91, Taf. CCII, fig. 497.

1841. DRASSUS FORMOSUS WALCK., H. N. d. Ins. Apt., II, p. 488.

1851. MICARIA PULICARIA WESTR., Förteckn. etc., p. 47.

1858. DRASSUS MICANS BLACKW., Deser. of six newly disc. spec. etc., in Ann. and Mag. of Nat. Hist., 3 Ser., I, p. 430.

1861. " " ID., Spid. of Gr. Brit., I, p. 118, Pl. VI, fig. 72.

1861. " NITENS ID., ibid., p. 119, Pl. VI, fig. 73.

?1861. MICARIA " WESTR., Aran. Suec., p. 336.

1866. " PULICARIA L. KOCH, Die Arach.-fam. d. Drassiden, p. 62, Taf. III, figg. 44—46.

1867. MACARIA FORMOSA OHL., Aran d. Prov. Preuss., p. 104.

1867. " NITENS ID., ibid. (saltem ad partem).

BLACKWALL ranges, and beyond question rightly, *Macaria formosa* C. KOCH under his *Drassus nitens*, whereas L. KOCH, though with a note of interrogation, classes the latter under his *Micaria nitens*, and takes up *Dr. micans* BLACKW. as a synonym to *Mic. pulicaria* or *Mac. formosa* C. KOCH, OHL. *Dr. micans* BLACKW. is however certainly but a variety of *D. nitens* BLACKW. or *M. pulicaria*, only deviating from the normal form in having the abdomen more uniformly coloured, just as *M. formosa* C. KOCH is a variety with uniformly coloured cephalothorax (without the white radiating streaks). I have received from OHLERT, under the name of "*Mac. nitens*", a very young undeveloped female, which I cannot distinguish from *M. pulicaria* by any other characteristic than that both cephalothorax and abdomen are without the white lines, only with a little white spot just above the anus; the thighs of at least the 1st pair have evidently in that specimen two spines, one above, at the base, and one in front, towards the extremity, as in *M. pulicaria*.

Micaria nitens L. KOCH (Die Arachn.-fam. d. Drass., p. 90) of which that author had only seen young, not fully developed females, is stated to differ from *M. pulicaria* also by *all* the thighs being furnished with only *one* spine (above), and the *tibiæ and metatarsi of the 1st pair with two rows of very short spines on the under-side*, whereas in *M. pulicaria* the tibiæ of the 1st pair are without spines, and the thighs of the 1st pair have *two*, and those of the 3rd pair as many as *four* spines. *M. nitens* L. KOCH would therefore seem to be a separate species; but whether C. KOCH's *M. nitens* be identical with it, or only a variety of *M. pulicaria*, is uncertain. At any rate it seems to me, that the specific name *nitens* ought to be discarded, as having been already in 1833 — i. e. long before it was employed by C. KOCH — given by BLACKWALL to *M. pulicaria* (SUND.). There is however no occasion to rechristen L. KOCH's *M. nitens* before full-grown and fully recognizable examples of it are met with. It is often very difficult to distinguish fully developed forms of the Drassoid family; young specimens it is, in the present state of the science, not seldom utterly impossible to identify with certainty. To *name* suchlike half-developed animals can only lead to still farther confusion in the already sufficiently entangled synonymisms.

As regards *Mic. nitens* WESTR., of which I now have the type-specimen, an, as it appears to me, undeveloped female, before me, I cannot any more than WESTRING distinguish it from *M. pulicaria* by any thing else than its smaller size and "*indumento abdominis rudiore et magis unicolore*". Any spines under the tibiæ of the 1st pair I am not able to discover — and the species seems therefore to be distinguished from *M. nitens* L. KOCH — but neither can I see distinctly (the specimen is dried and somewhat injured) more than *one* spine on the thighs. It may however be questionable, whether the spine-armature is always precisely alike in quite young and in full-grown specimens. As yet I am inclined to look upon *M. nitens* WESTR., as well as *M. nitens* C. KOCH and *M. nitens* OHL., as varieties only of *M. pulicaria*.

M. guttulata C. KOCH is probably also only a variety of *M. pulicaria*. I have a ♂ *jun.* of this last species, in which, as in *M. guttulata*, only the *two* foremost, not all the four anterior thighs are black.

(Pag. 336.) 3. *M. nitens* [= *Micaria pulicaria* (SUND.) 1832, Var.?].

See preceding species, *M. pulicaria* WESTR.

(Pag. 336.) 2. *M. subopaca* [= *Micaria sub-opaca* WESTR. 1861].

Of this species I have seen but one specimen, that which served as type for WESTRING's description. It is a fullgrown male, shrunken and pasted on a piece of cardboard, so that only the upper side is accessible to examination. One however immediately perceives that it is a peculiar species, completely distinct from *M. pulicaria*. The cephalothorax is scarcely 1 millim. long, the whole body 2 millim.; the anterior row of eyes is only *slightly* curved, the two anterior central eyes, which are almost in contact with the anterior lateral eyes, are not larger than, but at the utmost equal in size to these latter. With *M. nitens* L. KOCH ¹⁾ *M. sub-opaca* cannot be identical, for in the former the anterior row of eyes is said to be *strongly* curved forward, the anterior lateral *larger* than the anterior central eyes, and the tibiae of the 1st pair armed on the under-side with 2 rows of very short spines, of which I see no traces in *M. sub-opaca*. On the thighs of this spider I cannot with certainty discover more than *one* very fine spine. The palpi are somewhat shorter than in *M. pulicaria* ♂; the length of the tibial joint is not greater than its breadth, the spine at its extremity is slightly curved upward, and longer than in *M. pulicaria*; the tarsal joint (lamina bulbi) is oval, and its length not more than double its breadth (in *M. pulicaria* it is longer and slenderer); on the outer side of the clava may be seen a fine spine directed obliquely forward and outward, issuing from the bulb. Compare WESTRING's description ²⁾.

1) Die Arachn.-fam. d. Drassiden, p. 60.

2) The following description of a large and, as it seems, hitherto undescribed *Micaria*, *M. aenea* N. may be inserted here:

Micaria aenea N. Nigricans, squamulis minutis virescentibus nitidis tecta, abdomine fascia media transversa angusta albicanti, pedibus ad maximam partem luteo-nigricantibus. — ♀ ad. Long. c:a 5 millim.

Cephalothorax inverse ovatus, c:a 2 millim. longus (= patella + tibia ped. 4:ti paris), fere 1½ millim. latus, lat. frontis dimidium latitudinis maximæ cephalothoracis non superanti, nigro-fuscus, postice paullo clarior, squamulis minutis pallide virescentibus, purpureo-micantibus vestitum. Oculorum series postica de-super visa parum procurva, fere recta, oculis mediis longius inter se quam a lateribus remotis; series antica fortiter procurva, oculis lateralibus paullo majoribus quam sunt medii. Mandibulae sub-cylindratae, tibiis anticis vix crassiores, pilosae, non squamosae, cum maxillis et labio nigro-fuscae. Sternum nigricans, pilosum, non squamosum. Palpi nigro-testacei, parte femorali nigricanti. Pedes ad maximam partem nigricanti-lutei, femoribus anterioribus praesertim et metatarsis obscurioribus, nigricantibus, patellis tarsisque clarioribus, coxis posterioribus testa-

(Pag. 337.) XII. DRASSUS [= *Drassus* (WALCK.) 1805 *ad part.*].

Vid. THOR., On Eur. Spid., p. 147.

(Pag. 339.) 1. *D. rubens* ¹⁾ [= *Drassus quadri-punctatus* (LINN.) 1758, *Var.*].

See the following species, *D. sericeus* WESTR.

(Pag. 340.) 2. *D. sericeus* [= *Drassus quadri-punctatus* (LINN.) 1758].

Syn.: 1758. ARANEA QUADRI-PUNCTATA LINN., Syst. Nat., Ed. 10, I, p. 622.

1832. DRASSUS SERICEUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 136.

?1834. FILISTATA SERICEA REUSS, Zool. Misc., Arachn., p. 199 (204), Taf. XIV, fig. 3.

1837. DRASSUS SERICEUS WALCK., H. N. d. Ins. Apt., I, p. 619.

1839. " " C. KOCH, Die Arachn., VI, p. 37, Taf. CXC, figg. 457, 458 (*ad part.*).

1856. " QUADRI-PUNCTATUS THOR., Rec. crit. Aran., p. 89.

?1861. " SERICEUS BLACKW., Spid. of Gr. Brit., I, p. 111, Pl. VI, fig. 67 (*ad part.*).

1861. " RUBENS [RUBRENS] WESTR., Aran. Suec., p. 339.

1866. " MEDIUS L. KOCH, Die Arachn.-fam. d. Drassiden, p. 82, Taf. IV, fig. 56.

?1867. " SERICEUS OHL., Aran. d. Prov. Preuss., p. 93.

That LINNÆUS' *Ar. 4-punctata* is identical with this in Sweden very common *Drassus*, and not with *Steatoda bipunctata*, to which it

ceis; squamulis minutissimis virescenti-æneis tecti, pilosi et aculeati (aculeis e. gr. in femore 1:mi paris supra 1, 1 vel tantum 1(?), antice 1, in tibia ejusdem paris subtus 2, 2, in metatarso vero nullis); 4:ti paris pedes c:a 6½, 1:mi c:a 5 millim. longi. Abdomen sub-ellipticum, 3 millim. longum, lat. maxima (in medio) 2 millim., nigro-fuscum, squamulis minutis virescenti-æneis, supra purpureo-micantibus undique vestitus, fascia media transversa angusta albicanti, in medio angulata. Vulva ex fovea magna transversa sub-ovata constat, postice callo lato humili, in medio abrupto, limitata, impressionibus duabus parvis in fundo prope marginem anticum.

In Sudermannia (ad Sundsör) a me ipso et in insula Gotska Sandön maris Baltici ab EISEN et STUXBERG inventa. — ♂ ignotus.

1) "*D. rubrens*" is (in WALCKENAER) a lapsus calami for *D. rubens*, and there is as little reason to copy that as any other grammatical or typographical error. MENGE and OHLERT have already corrected it.

has so often been referred, I have in my Rec. crit. Aran. (loc. cit.) endeavoured to prove ¹⁾. Of the following citations, that which we have drawn from REUSS is uncertain: it may perhaps indicate *D. scutulatus* L. KOCH, under which it is taken up by L. KOCH, as well as *D. 4-maculatus* or *sericeus* SUNDELL, WESTR., which last probably is not rare in Germany (I have myself met with it at Giessen). The citation from OHLERT is dubious in the same respect. — Judging from C. KOCH's figures in Die Arachn., that writer's *D. sericeus*, which is also by L. KOCH classed under *D. scutulatus*, certainly *ad partem* belongs to *D. 4-punctatus*, for in these figures the metatarsi of the 4th pair of legs are evidently longer than the tibiae. — WALCKENAER's description of *D. sericeus* is only an extract from SUNDELL's: the animal itself was unknown to him. — Specimens of both sexes, that I have sent to L. KOCH, have by him been identified as belonging to his *Drassus medius*. The differences, which that distinguished arachnologist, in the passage referred to, considered that he had discovered between *D. sericeus* as described by WESTRING and *D. medius*, do not really exist: both WESTRING and L. KOCH call the posterior central eyes *round* (they are however, as L. KOCH rightly observes, "etwas eckig verzogen") and as regards the length of the legs, they are, *in comparison with that of the cephalothorax*, scarcely perceptibly longer according to WESTRING's measures than according to those given by KOCH.

As regards *D. rubens* WESTR., I can see nothing more in that species than somewhat *larger and paler* specimens, than is usually met with, of *D. 4-punctatus*. Not even in the organs of copulation can I discover any difference. I have had the opportunity of examining one of the specimens (a dried ♀) which had served as the ground of WESTRING's description. I have also two full-grown specimens preserved in spirits, a ♂ and ♀, the former from Mjörn in Bohuslän (the same place whence WESTRING received specimens), presented to me by Dr Ax. LJUNGMAN, the latter caught in Skåne by Prof. LILLJEBORG. These specimens perfectly agree with WESTRING's descrip-

1) The original description of *A. 4-punctata* (in LINNÆUS' Journey to Öland, p. 34) is as follows (the Swedish part being rendered into Latin): "*Araneus oblongus fuscus abdomine nigro, apice spinoso, tergo quattuor punctis depressis notato in domibus inventus est; pedes ejus fusi erant, cephalothorax colore fuliginis; abdomen nigrum, cinereo-pilosum, in apice 5 vel 6 pallidas et molles spinas habebat, de quibus fila deducebantur*".

tion, and have been by WESTRING himself identified as belonging to his *D. rubens*. These same specimens I sent to Dr L. KOCH, to ascertain whether they belong to that author's *D. rubens*, but neither could he discover that they in any way specifically differ from *D. medius*, i. e. from *D. 4-punctatus* or *sericeus* WESTR.

Whether *D. rubens* WALCK. (Ins. Apt., I, p. 617) — under which several species, *D. montanus* HAHN, *D. murinus* HAHN, *D. cinereus* HAHN and *Filistata incerta* REUSS are cited, and which has "mandibules portées en avant" — belong to *D. rubens* L. KOCH or not, I dare not attempt to decide; from *D. rubens* WESTR. it is certainly different ¹⁾. To me it seems best to drop that name entirely, and give L. KOCH's *D. rubens* a new name, provided it really be a particular species separate from *D. 4-punctatus*. I ought to remark that the characteristic whereby L. KOCH, in his analytical table of species, distinguishes his *D. rubens* from *D. medius* or *4-punctatus*, is not constant: a spine on the tibia of the 3rd pair of legs is often, but *not always*, met with even in the last mentioned species, especially in ♂. MENGE (Verzeichn. Danz. Spinn., p. 62) has also a "*D. rubens*", said to "resemble *Dysdera*": it is also taken up by OHLERT in his Aran. d. Prov. Preuss., p. 95. MENGE and OHLERT class *D. montanus* HAHN ²⁾ under this *D. rubens* (which OHLERT had never seen).

The long and coarse process on the tibial joint in BLACKWALL's figure of the palpus of his *D. sericeus*, seems to me to show that he had the real *D. sericeus* or *4-punctatus* before him. A ♂ *ad.* from

1) In Faune Franç., Arachn., p. 161, WALCKENAER gives the following lengthy description of the vulva in his *D. rubens*: "L'épigyne ou l'organe pré-vulvaire offre d'abord une élévation arrondie, glabre et rougeâtre, quoique ayant des poils jaunes fins qui ne cache point sa surface. Cet espace arrondi montre à sa partie inférieure une large ouverture en carré long, élargie à sa partie supérieure par deux petites échancrures anguleuses latérales, une de chaque côté. Sous le bord supérieure de cette ouverture, et les petits poils qui la bordent, en forme de cils, on aperçoit deux petits trous ou enfoncements d'un rouge pâle, au bas desquels se prolonge un conjoncteur glabre, luisant, d'un brun rouge, conique ou diminuant vers sa partie postérieure, qui atteint presque à l'extrémité de la grande ouverture, et est porté sur un fond glabre, brun rouge, qui la remplit, et encadré par les lèvres à rebords brun rouge, et glabres comme le conjoncteur qui les borde. Le tout s'aplatit et ce confond avec le rebord de l'épigastre, qui est bordé dans cette endroit par des poils jaunes plus longs. L'ensemble a beaucoup de ressemblance avec l'organe pré-vulvaire d'une femelle de plusieurs quadrupèdes".

2) Die Arachn., II, p. 12, Taf. XLI, fig. 103.

England, with which CAMBRIDGE has favoured me, and which he calls *D. sericeus* BLACKW., belongs however to an entirely peculiar though to *D. 4-punctatus* nearly related species, which I call *D. Blackwallii*. In ♂ of this species the tibial joint of the very slender palpi is rather shorter than the patellar, not longer than broad at the extremity, with a blunt corner at the extremity, below, and a *tolerably slender, pointed* process at the apex on the outer side: that process is not more than *half as long as the joint* itself, directed forward and slightly outward, with the point itself bent somewhat *inward and downward*; the lamina (tarsal joint) is as long as the patellar and tibial joints together and as the tarsus of the 1st pair, narrower than its tibia and *much narrower than the mandibles*, something more than twice its own breadth in length: the bulbus is pointed in front. The interval between the posterior central eyes is something more than the eye's diameter, and than the interval between the anterior central eyes; the anterior side eyes are oval. The mandibles are gradually tapering towards their extremity, but little thicker than the tibia; the colour of the cephalothorax and legs more reddish brown. In other respects the male seems to be in form and colour precisely similar to *D. 4-punctatus* ♂: the "shield" of the abdomen is concealed by hair, the thighs of the two hind pairs of legs have each 3 spines above, their tibiæ none above (in *this* specimen); their patellæ have one spine. The length of the cephalothorax is $4\frac{1}{2}$ millim., that of the 4th pair of legs 13, that of the 1st pair $9\frac{1}{2}$ millim.; the metatarsus of the 4th pair is visibly longer than the tibia.

In a female of *Drassus Blackwallii* n., which I also have received from CAMBRIDGE, the vulva has the form of a small, pale brown, oval area, which somewhat behind its centrum exhibits a *very small oblong fovea*, the transversal diameter of which is *not so large as the diameter of the tarsi*; the tibiæ of the 3th pair have a spine also above (in this specimen). The four posterior legs have 3 spines above, as in *D. 4-punctatus*, which also the female, as far I can see, perfectly resembles: the legs are however comparatively shorter.

In *D. 4-punctatus* ♂ the tibial and patellar joints of the palpi are about equally long, a little longer than their breadth at the apex (seen from the inner side); the tibial joint has at its apex on the under side a strong corner; its outside is, towards the extremity, drawn out into a *very coarse and strong* process, which at its root is about half as broad as the joint itself, at least *as long as the whole joint*, curved inwards and slightly upwards, tapering more

rapidly nearer the extremity, which is directed forwards and somewhat upwards, with the slender apex itself obliquely truncated and finely notched or crenulated. The lamina is oviform, somewhat longer than the patellar and tibial joints together, quite as long as the mandibles and *at least as broad as these last*. The bulbus is short, almost truncated and broad at the extremity, where it has on the under side a *little*, short, crooked hook; from the under side proceeds in a forward and inward direction a long, fine, black spine, which bends circularly before the bulbus, and the point of which, accompanied by a pale membranous appendage, is often seen to project from the outer side of the apex of the bulbus. The female's vulva is formed by a *large, deep, semi-elliptic*, black or brown fovea, open behind. WESTRING's statement, that ♂ of this species has no such "shield" on the back of the abdomen, as is seen in the males of certain species of *Drassus* and *Melanophora*, e. g. *D. scutulatus*, *M. Petiverii* (*subterranea*) etc., is not correct: the shield is present, but in completely uninjured (living or dried) specimens it is entirely concealed by hair; in specimens preserved in spirits, as also in such specimens as have had the hair rubbed off in that part, it may immediately be seen.

I possess two female specimens of a Swedish *Drassus*, which very closely resembles *D. 4-punctatus*, but is perhaps a separate species, and to which, in order to draw attention to it, I give a separate name: it may be called *D. gotlandicus*. It appears to differ from *D. 4-punctatus* almost only in the appearance of the vulva, which is quite different from that of *D. 4-punctatus*: in the posterior half of a little oblong, light-brown spot, bounded behind by the rima genitalis, there are two small, dark brown, oppositely [()] curved, c- or somewhat s-formed costæ, and a little in front of them a very small ring or fovea, from which a fine costa or line seems to extend backward between the two first-mentioned costæ. The cephalothorax is 5 millim., the 4th pair of legs 14½ millim. long; the metatarsi of this pair are but triflingly longer than the tibiæ. In other respects *D. gotlandicus* is so like *D. 4-punctatus*, that WESTRING's and L. KOCH's descriptions of the latter (even as regards the spine-armature) are word for word applicable to the former. It was found in the summer of 1868 by my wife in a house at Wisby in Gotland. I have since received specimens of the same from Münster in Westphalia from Mr F. KARSCH.

(Pag. 342.) 3. *D. fuscus* [= *Drassus scutulatus* L. KOCH 1866].

Syn.: ?†1804. ARANEA LUCIFUGA PANZ., Syst. Nomencl., p. 244 (SCHÆFF., Ic. Ins. Ratisb., II, Tab. CI, fig. VII).

†1832. DRASSUS FUSCUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 134.

1836. „ LUCIFUGUS C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 137 (Deutschl. Crust., Myr. u. Arachn., 4), 3, 4.

†1839. „ SERICEUS ID., Die Arachn., VI, p. 37, Taf. CXC, figg. 457, 458 (*ad partem*).

1866. „ SCUTULATUS L. KOCH, Die Arachn.-fam. d. Drassiden, p. 93, Taf. IV, figg. 61, 62.

D. fuscus LATR., which according to LATREILLE is found *under stones* ¹⁾, can hardly be identical with this species, which is only met with in houses, and, according to SUNDEVALL, under the bark of dead trees. *D. fuscus* WALCK. ²⁾, which has *black thighs*, and under which not only *D. fuscus* SUND., but also (and probably correctly) *D. tibialis* HAHN ³⁾ is cited, seems to be a separate and to me unknown species. See further concerning *D. fuscus* LATR. and WALCK. the next following species, *D. cognatus* WESTR. — *D. sericeus* C. KOCH probably includes both the true *D. sericeus* SUND., WESTR., or *4-punctatus* (LINN.) (see that species above, p. 177), and *D. scutulatus*. — L. KOCH has kindly sent me a ♂ and ♀ *ad.* of his *D. scutulatus*, which completely agree with *D. fuscus* SUND. and WESTR.

In the male of *D. scutulatus* or *fuscus* WESTR., the tibial joint of the palpi is nearly as long as the patellar, somewhat broader towards the extremity, not longer than broad; from its outer side, at the apex, projects a coarse strong process, which is *almost as long as the joint itself*: at first it is nearly straight, directed forward and outward and also somewhat *downward*, but toward the pointed extremity it is suddenly bent in such a manner, that *the extremity is directed forward and somewhat upward* (it does not form a downward-bent hook, as is stated by L. KOCH). The bulbus has on the under side, towards the apex, a strong, red, somewhat clavate hook curved forwards (upwards); the lamina is somewhat longer than the patellar + the tibial joint, *not* broader than the mandibles and about as long as these organs. — The female is easily distinguished from f. inst. *D. 4-punctatus* ♀ by the 4th pair of legs

1) Gen. Crust. et Ins., I, p. 87.

2) H. N. d. Ins. Apt., I, p. 617; Faune Franç., Arachn., p. 164.

3) Monogr. Aran., VII, Tab. 2, fig. b.

being only $2\frac{1}{2}$ times as long as the cephalothorax, and its metatarsi being *as long as* (not perceptibly longer than) the tibiæ, as also by the number of the spines on the four posterior thighs, above, which are only *two*, whereas in *D. 4-punctatus* ♀ the 4th pair of legs is *three* times as long as the cephalothorax, its metatarsi *visibly* (at least $\frac{1}{2}$ millim.) *longer* than the tibiæ, and the spines on the four posterior thighs above are *three* in number. — This species is much rarer in Sweden than *D. sericeus* or *4-punctatus*.

(Pag. 343.) 4. ***D. cognatus*** [= ***Drassus cognatus*** WESTR. 1861].

Syn.: ?†1843. DRASSUS FUSCUS C. KOCH, Die Arachn., X, p. 123, Taf. CCCLXVII, fig. 837.

1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p. 86, Taf. IV, fig. 58.

C. KOCH's synonym here given is far from certain. L. KOCH however also takes it up under the species at present in question, for which he lays claim to the Latreillian specific name *fuscus*. But *D. fuscus* LATR. ¹⁾ lives *under stones*, not, like *D. cognatus*, under the bark of trees. At any rate opinions are so divided as to what LATREILLE meant by his *D. fuscus* — it has been taken up under at least four different species (*D. fuscus* WALCK. ²⁾, *D. fuscus* SUND., *D. fuscus* L. KOCH and *D. segestriiformis* DUF., SIM.) — that, as it seems impossible to decide which is right, it is certainly best to drop that specific name for the present. It is probably reserved to some future accomplished French arachnologist to search out not only this, but many other species described by LATREILLE and WALCKENAER, but which for the present cannot be recognized.

In ♂ of *D. cognatus* the tibial joint of the palpus is scarcely shorter than the patellar, something shorter than it is broad at the

1) Gen. Crust. et Ins., I, p. 87.

2) It seems to be quite a different species, that WALCKENAER in H. N. d. Ins. Apt. described under the name *D. fuscus*, from that which he first, in Faune Franç., Arachn., mentions under that name. The latter he describes in the following words (and citing LATREILLE'S *D. fuscus*) loc. cit., p. 164: "*D. noirâtre*, *D. fuscus* (Long., 5 lig.). Il a la forme du drasse noir, mais il est d'un bon tiers plus grand que lui. Sa couleur est rouge-brun sale. L'abdomen est soyeux, plus foncé et plus brun; les pattes sont plus pâles. Les cuisses de la paire antérieure ne sont pas aussi renflées que dans le *Drassus ater*. J'ai trouvé une seule fois cette espèce à Saint-Cloud, le 6 juin; elle habite sous les pierres comme la précédente [*Dr. ater*]". — Compare WALCK., H. N. d. Ins. Apt., I, p. 617.

apex (seen from the inner side), without any projecting protuberance on the under side of the apex; the extremity is above, on the outer side, produced into *an almost lancet-formed process*, pointing forwards and lying over the lamina; this process is *of the same length as the tibial joint, not broader than half that joint* when viewed from above, arched towards the base, and grooved longitudinally towards the apex. The lamina is obliquely oviform, about double as long as it is broad, longer than the patellar and tibial joints together, as long as the tarsus of the 1st pair and as the mandibles, somewhat broader than these and than the tibiae of the first pair, and not fully so broad as the thighs of that pair; the bulbus is destitute of projecting parts on the under side, and nearly reaches the apex of the lamina.

(Pag. 345.) 5. **D. troglodytes** [= *Drassus troglodytes* C. KOCH 1839].

- Syn.: 1839. DRASSUS TROGLODYTES C. KOCH, Die Arachn., VI, p. 35, Taf. CLXXXIX, figg. 455, 456.
 1841. CLUBIONA „ WALCK., H. N. d. Ins. Apt., II, p. 480.
 1860. DRASSUS CLAVATOR CAMBR., Descr. of two Brit. Spid., in Ann. and Mag. of Nat. Hist., 3 Ser., V, p. 171.
 1861. „ „ BLACKW., Spid. of Gr. Brit., I, p. 109, Pl. VI, fig. 66.
 1866. „ TROGLODYTES L. KOCH, Die Arachn.-fam. d. Drassiden, p. 116, Taf. V, figg. 73, 74.

(Pag. 347.) 6. **D. infuscatus** [= *Drassus infuscatus* WESTR. 1851].

- Syn.: 1851. DRASSUS INFUSCATUS WESTR., Förteckn. etc., p. 47.
 1868. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p. 99, Taf. IV, fig. 64.

A fullgrown female of *D. infuscatus* L. KOCH, which Dr KOCH obligingly sent me, has been by WESTRING compared with the type-specimen of his *D. infuscatus* and acknowledged identical with this species. — I have myself only young and imperfectly developed *Swedish* specimens (received from WESTRING himself) of this spider. In these specimens the cephalothorax is a trifle longer than the tibia and patella of the 4th pair together; the spine-armature of the legs is conformable to L. KOCH's statement, except as regards the thighs of the 4th pair, which in my specimens have above 1, 1,

in front 1, and behind 1 spine, not 1, 1 both before and behind, as is stated by Koch. They are easily distinguished from equally large specimens of *D. cognatus* by the anterior central eyes being rather smaller than the lateral eyes, and by the anterior row of eyes being more curved forward.

Of the still smaller *D. umbratilis* L. Koch ¹⁾, the cephalothorax of which is only 2—3 millim. long, and the 4th pair of legs 5—7½ millim., I have found two adult female specimens in Sweden, one in the neighbourhood of Stockholm and one in Bohuslän. The vulva in this species has the form of a tolerably large fovea, open in front, bounded by a large, horseshoe-formed, or half-oval costa; this fovea is divided into two by one longitudinal costa. There are no spines under the tibiae of the 1st pair in my specimens (which have been identified by L. Koch himself). — This species is now for the first time recorded as Swedish ²⁾.

1) Die Arachn.-fam. d. Drassiden, p. 113, Taf. V, fig. 71.

2) The following species of *Drassus* appear to be new to science:

Drassus occidentalis N. Cinereo-testaceus totus, abdomine tantum cinerascenti-nigro, maculis parvis testaceis, per paria dispositis, in dorso; cephalothorax longior quam patella + tibia pedum 4-ti paris, antice non multo angustatus; oculi seriei anticae sub-rectae aequales; pedes 4-ti paris cephalothorace c:a 2½ longiores, femoribus posticis supra aculeis 1, 1, tibiis posticis supra non aculeatis. — ♀ ad. Long. c:a 8½ millim.

Cephalothorax 3¾ millim. longus, c:a 2¾ latus, antice non multo angustatus, in dorso leviter convexus, parcius pubescens et pilosus, cum mandibulis, palpis, pedibusque cinereo-testaceus. Oculi medii antici rotundi, vix minores quam laterales antici, a margine clypei spatio minore distantes, quam quo a mediis posticis distant, a lateralibus vero spatio paullo majore (vix diametrum oculi æquanti) quam inter se. Oculi medii postici valde deplanati, ita ut limites eorum ægre distingui possint; certo situ saltem spatium inter eos non minus esse videtur, quam inter medios anticos; oculi laterales postici a mediis posticis plus duplo longius distant quam hi inter se, et fere duplo longius quam laterales inter se, qui spatio diametrum oculi æquanti disjuncti sunt. Mandibulae sat fortes, æque longae atque patella 1:mi paris et eâ paullo crassiores, longitudine metatarsi + dimidii tarsi pedum 1:mi paris, sub-cylindratae, in dorso versus basin fortius convexae. Palporum pars tibialis non dimidio longior quam latior, longitudine partis tarsalis. Pedes breves et crassi, 1:mi paris c:a 8½, 2:di 7 millim. longi; 4-ti paris 9½ millim. (patella cum tibia 3¼ millim.), metatarso non longiore quam tibia. 1:mi et 2:di paris femora supra aculeos 1, 1, antice 1, postice 1 habent, tibiae nullos aculeos; femora 3:tii et 4-ti paris supra 1, 1, antice 1 habent; tibiae horum pedum supra non aculeati. Vulva satis insignis: prope rimam genitalem adsunt costae duae fortes, fuscæ, fere C-formes, quæ apicibus postice inter se appropinquant, antice vero divaricant, ita ut aream fere semi-ovalem includant:

(Pag. 349.) 7. *D. angustifrons* [= *Drassus angustifrons* WESTR. 1861].

Of this remarkable spider, which is recognized without difficulty by its unusually narrow forehead and the peculiar position of

ante has costas linea vel costa tenuis transversa, recurva adest, a qua costa longa, humilis et lata versus rimam genitalem inter costas illas C-formes extensa est.

Specimen femineum unicum ad *Niceam* (Nizza) inveni.

D. nyctelius N. Cephalothorax nigro-fuscus, cinereo-pubescent, longior quam patella + tibia 4:ti paris; abdomen cinereo-nigricans, pedes nigro-fusci, femoribus versus basin clarioribus, nigro-lineatis, supra aculeis 1, 1 præditis: 4:ti paris cephalothorace $2\frac{1}{4}$ – $2\frac{1}{3}$ tantum longiores, tibia æque saltem longa atque metatarsus; tibiæ 4 posteriores supra non aculeatæ; series oculorum antica sub-recta, oculis lateralibus paullo majoribus quam mediis. — ♀ *ad.* Long. ca 10 millim.

Cephalothorax satis latus et brevis, in lateribus postice fortius rotundatus, 4 millim. longus, fere 3 millim. latus, clypeo $1\frac{3}{4}$ millim. lato; longitudine patellam + tibiam + metatarsum + tarsum pedum 3:tii paris æquans. Oculi laterales antici oblongi; medii antici rotundi, inter se longius quam a lateralibus distantes, spatioque disjuncti, quod oculi diametro paullo majus est. Oculi medii postici deplanati, ovati, transverse positi, majores quam medii antici, et inter se spatio distantes, quod multo minus est quam spatium inter medios anticos; spatium inter oculos posticos laterales et medios plus duplo majus, quam quo distant hi inter se; postici laterales æque saltem magni atque medii antici. Mandibulæ nigro-fuscae, æque longæ atque tibiæ 1:mi paris ($1\frac{1}{2}$ millim.), femoribus anticis angustiores; maxillæ et labium nigro-fusca, sternum obscure fuscum, margine nigricanti. Palpi breves, nigricantes, ad basin clariores; pars tibialis longitudine partis patellaris, paullo tantum longior quam latior. Pedes 1:mi paris $7\frac{1}{2}$, 2:di $7\frac{1}{4}$, 3:tii $6\frac{3}{4}$, 4:ti $8\frac{1}{2}$ millim. longi; patella + tibia 4:ti paris fere 3 millim.; fusci, femoribus magis rufescentibus, ad apicem obscurioribus, supra lineis 1 vel 3 nigris ad longitudinem ductis, quæ lineæ etiam in internodiis proxime sequentibus plus minus distincte continuatæ sunt. Abdomen nigro-fuscum, nigro-pubescent, serie duplici striarum minutarum testacearum in medio dorso; ventre fusco-cinereo; ad rimam genitalem elevationes duæ parvæ, fuscae, et ante eas impressio major, levis, semi-ovalis vel formâ ferri equini, antice aperta aspicitur.

Sub lapide ad *Niceam* inventa.

D. macellinus N. Cephalothorax in ♀ multo, in ♂ parum longior quam patella + tibia 4:ti paris, rufescenti-fuscus, densius cinereo-pubescent, margine concolore, parte cephalica infuscata; mandibulæ nigro-fuscae, pedes palpique breves, rufo-ferruginei; abdomen cinereum vel testaceo-fuscum, in dorso striis maculisve minutis testaceis in series duas ordinatis, plus minus distinctis; series oculorum antica recta; femora omnia supra aculeis 1, 1, tibiæ 4 posteriores supra non aculeatæ; tibia 4:ti paris æque saltem longa atque metatarsus. — ♂ ♂ *ad.* Long. ♂ 5–9, ♀ ca $13\frac{1}{2}$ millim.

the eyes (the eye-area is not fully half as broad again as it is long), I have beside WESTRING's type-specimen (a ♀ *jun.*) seen but one individual, a fullgrown male, which Dr G. LINDSTRÖM captured in the island of Stora Carlsö near Gotland and obligingly gave me. It is $6\frac{1}{2}$ millim. long, and the cephalothorax nearly 3 millim., something shorter than the patella and tibia of the 4th pair of legs together, which legs are 10 millim. long, with the tibia equal in length to the metatarsus. The two *first* pairs of legs have above 1, 1, and before 1 spine, their tibia beneath at least 1, perhaps 1, 1, 1; on the 3rd pair the thigh has above 1, 1, 1, before and behind 1, 1; the patella behind 1, the tibia above 1, before 1, 1, 1, behind 1, 1, beneath 2, 2, 2; the thighs of the 4th pair of legs have above 1, 1, before 1, behind 1, the patellæ behind 1; the tibiæ above 1, before 1, 1, 1, behind 1, 1, 1, beneath 2, 2, 2 spines. The whole animal (which had lately changed its skin) is of a greyish yellow

Femina. Cephalothorax $4\frac{3}{4}$ —5 millim. longus, $3\frac{1}{2}$ latus, latit. clypei $2\frac{1}{4}$ millim., æque longus atque tibia + metatarsus + tarsus 1:mi paris, antice sat latus, in dorso convexus. Oculi seriei anticæ omnino rectæ æquales, rotundi, medii eorum parum longius inter se quam a laterilibus distantes (spatio diametro oculi paullo minore). Area oculorum mediorum paullo longior quam latior, parum latior antice quam postice; oculi medii postici deplanati, sub-angulati, spatio disjuncti quod oculi diametro minus est duploque minus quam spatium inter eos et laterales posticos, qui minores sunt et rotundi. Mandibulæ longitudine tibiæ 1:mi paris, crassitie femoris ejusdem paris. Palporum pars tibialis tarsali fere dimidio longior. Pedes 4:ti paris cephalothorace $2\frac{1}{4}$ — $2\frac{1}{2}$ longiores; 1:mi paris $10\frac{1}{2}$, 2:di $8\frac{1}{2}$, 3:tii 8, 4:ti $11\frac{1}{2}$ millim. longi. Vulva ex duabus elevationibus minutis obscuris ad rimam genitalem constare videtur. — Nonne omnino adulta?

Mas. Cephalothorax plerumque $3\frac{3}{4}$ —4 millim. longus; pedes 1:mi paris 10, 2:di 8, 3:tii $7\frac{1}{2}$, 4:ti 11 millim. longi: 4:ti paris igitur cephalothorace $2\frac{3}{4}$ —3:plo longiores. Variat tamen multo minor. Palpi breves ($3\frac{1}{2}$ millim.); articuli 3 ultimi conjunctim longitudine mandibulam æquant. Pars tibialis patellari paullo brevior, paulloque brevior quam latior; apex ejus, qui subtus angulum monstrat, supra versus latus exterius in procursum productus est acuminatum, sub-lanceolatum, porrectum, qui ipso articulo paullo brevior est, ad basin satis latum, sed non æque crassum, apice nigro paullo foras et deorsum curvato. Lamina brevis, ovata, latitudine vix duplo longior, paullo angustior quam mandibula (quæ æque longa est atque patella 1:mi paris), æque lata atque tibia 1:mi paris; bulbus ovatus, partibus prominentibus in latere inferiore carens; in apice superficies ejus infera in tres spinas vel lacinias producta esse videtur, quarum media reliquis latior est.

Sub lapidibus ad *Nicæam* sæpius inventus, fortasse etiam ad Kissingen Bavariæ. — Simillimus figuræ "*D. murini* HAHN" a C. KOCH in Die Arachn. X, Taf. CCCLVII, fig. 836 datæ; descriptio vero vulvæ *D. murini* (loc. cit., p. 122) in nostram speciem non cadit, sed potius in *D. cognatum* WESTR.

colour, black-haired, with the exception of the abdomen, which is greyish black with a silky gloss: it has a paler central streak or spot on the back in front, and the area before the rima genitilis is yellowish. The tibial joint of the palpus is somewhat shorter than the patellar, rather shorter than its own breadth, towards the apex gradually broader, with a strongly projecting corner on the under side of the apex and a very little, scarcely perceptible tooth at the extremity of the outer side. The lamina is truncated at the base, where it is scarcely broader than the tibial joint at its apex, as long as the patellar and tibial joints together, and as broad as the patella of the 2nd pair of legs. The bulbus is very simple, with a little protuberance at the base on the under side and with a couple of fine points or hooks at its extremity(?).

(Pag. 350.) XIII. PYTHONISSA [= *Gnaphosa* (LATR.) 1804 *ad part.*]¹⁾.

Vid. THOR., On Eur. Spid., p. 149.

(Pag. 350.) 1. *P. lucifuga* [= *Gnaphosa lucifuga* (WALCK.) 1802].

- Syn.*: 1802. ARANEA LUCIFUGA WALCK., Faune Par., II, p. 221.
 1804. „ MELANOGASTER LATR., H. N. d. Crust. et d. Ins., VII, p. 222.
 1805. DRASSUS LUCIFUGUS WALCK., Tabl. d. Aran., p. 45.
 1806. „ MELANOGASTER LATR., Gen. Crust. et Ins., I, p. 87.
 1837. PYTHONISSA NIGRA C. KOCH., Uebers. d. Arachn.-Syst., 1, p. 16.
 1839. „ LUCIFUGA ID., Die Arachn., VI, p. 54, Taf. CXCIV, figg. 468—470.
 ? 1839. „ OCCULTA ID., ibid., p. 58, Taf. CXCIV, fig. 472.
 1866. „ LUCIFUGA L. KOCH., Die Arachn.-fam. d. Drassiden, p. 10, Taf. I, figg. 5—8.
 1868. GNAPHOSA „ THOR., in EISEN et STUXBERG, Om Gotska Sandön, in Öfvers. af Vet.-Akad. Förhandl., XXV (1868), p. 379.

1) In this genus the posterior row of eyes is in general curved backwards by the lateral eyes being placed *behind* the central. That the lateral eyes are placed *lower* than the central, has of course no influence on the curvature of the series as seen from above, but only if it is seen from before. In this work the curvature of the posterior row is always determined as seen from above, and that of the front row as seen from before; the series is said to be curved forwards when its convexity is directed backwards, and vice versa.

L. KOCH has in his above-cited work (p. 18, Taf. I, fig. 11) under the name of *Pythonissa montana* described a species, which has probably often been confounded with *G. lucifuga*. Both species are also met with in Sweden, yet WESTRING seems not to have seen *G. montana* (L. KOCH). The two species are very closely allied, and the females are often difficult to distinguish. As however Dr KOCH has himself been kind enough to identify several specimens of both species in my collection, I cannot be mistaken with respect to the forms he intended, although my notion of the differences between them somewhat differs from Dr KOCH's, as will appear in the course of the following remarks. Of the species that I term *G. lucifuga*, I possess not only Swedish and German specimens, but also a ♀ from the neighbourhood of Paris kindly given me by SIMON under the name of "*Pythonissa lucifuga* (WALCK.)".

As well in *G. lucifuga* as in *G. montana* (as also *G. lugubris* and *G. muscorum*) the anterior lateral eyes are visibly larger than the anterior central. In both species the tibiae of the 3rd pair has spines behind (in *G. lucifuga* I have observed on these tibiae behind 1, 1, 1 or 1, 1, in *G. montana* 1, 1, 1 or 2, 1, 1; in both, before 1, 1, 1, beneath 2, 2, 2). *G. montana* is rather smaller than *G. lucifuga*, and the legs of the former are slenderer, and absolutely indeed shorter than those of the latter, but in proportion to the length of the cephalothorax, those of the ♂ are considerably, those of ♀ slightly, longer in *G. montana* than in *G. lucifuga*. The cephalothorax of *G. lucifuga* ♂ (as that of ♀ of both species) is longer than the patella and tibia of the 4th pair together, and that pair $2\frac{3}{4}$ —3 times as long as the cephalothorax (the cephalothorax about $6\frac{1}{2}$, the 4th pair of legs about $18\frac{1}{2}$ millim. long); the tibial joint of the palpi is somewhat shorter than the patellar, the length and breadth being about equal; it is at the extremity, above, towards the outer side, produced into a tapering, spine-like process, the apex of which is curved downward, and which is considerably shorter than the tibial joint itself. The lamina bulbi is as long as the patellar and tibial joints together, the bulbus somewhat swollen and uneven on the under side at the base. — In *G. montana* ♂ the cephalothorax is not longer than the patella and tibia of the 4th pair together, which pair is $3\frac{1}{4}$ — $3\frac{1}{2}$ times as long as the cephalothorax (cephalothorax about $5\frac{1}{2}$, 4th pair of legs about 19 millim.). The tibial joint of the palpus is somewhat shorter than the patellar joint, and, when viewed from the inner side, scarce more than half so long as

it is broad; above, on the outer side, it is produced into a strong pointed process directed forward, broad at the base, and tapering towards the apex, *as long as the joint itself*, and reaching forward to one third of the length of the lamina; this process has a depression towards the extremity, which is curved somewhat outwards and downwards. The lamina is somewhat longer than the two preceding joints together, the bulbus oviform, much swollen and uneven beneath at the base; at the extremity it seems to run out into two points or spines.

The chief difference between the *females* appears to consist in the cephalothorax of *G. lucifuga* being more *convex* in front, that of *G. montana* more strongly *flattened*: in *G. lucifuga* the back of the cephalothorax begins at a good distance behind the posterior row of eyes to incline convexly downwards (and forwards), but in *G. montana* on the contrary it is straight almost up to the posterior lateral eyes: this makes the head, when viewed from before, seem in *G. lucifuga* to be transversely and uniformly *convex* behind the posterior central eyes, which are posited *considerably lower* than the highest point of the pars cephalica, whereas in *G. montana* the head is much *flattened* behind the posterior eyes, so that the middle pair are situated *almost as high* as the highest part of the head. The vulva in *G. lucifuga* is almost Y-formed; it consists in fact farthest back of a little fovea, which in front sends out two diverging lobes or furrows, which enclose a large, thick, tongue-like, backward-directed, reddish brown, transversally-striped cylinder, on each side of the apex of which, against the wall of the fovea, appears a reddish brown protuberance; in the extreme posterior portion of the fovea is usually a little V- or Y-formed elevation. In *G. montana* the vulva forms an almost oviform or heart-shaped fovea, the anterior border of which is elongated into a similar, though somewhat smaller, process, on either side of which the fovea forms a pair of projecting lobes; here also are found a couple of small elevations forming at the posterior extremity of the fovea a little V or Y.

In *G. lucifuga* the thighs are of a lighter colour than the patellæ and tibiæ, generally *reddish*; in *G. montana* they are of the same colour as the patellæ and tibiæ (having at most a yellowish spot on the inner side), and *having no tendency to red*, but are black or brown like the cephalothorax. The *coxæ* of *G. montana* are however most frequently paler than the rest of the legs, the tarsi

and metatarsi of which may also be pale brown or yellowish, especially in ♂.

Both species might perhaps be shortly characterized thus:

G. lucifuga (WALCK.). Nigra vel fusca; femora internodiis proxime sequentibus pallidiora, plerumque rufescentia; cephalothorax in utroque sexu longior quam tibia cum patella 4:ti paris, dorso partis cephalicæ sub-arcuato; pedes 4:ti paris in ♂ cephalothorace $2\frac{3}{4}$ —3:plo longiores, in ♀ $2\frac{1}{2}$ vel paullo magis; calcar partis tibialis palporum in ♂ ipsa parte multo brevius. Long. cephalothoracis 6—8 millim.

G. montana (L. KOCH). Nigra vel fusca; femora eodem colore quo internodia proxime sequentia, non rubedine tincta; cephalothorax in ♀ longior, in ♂ non longior quam tibia cum patella 4:ti paris, parte cephalica valde deplanata, dorso recto; pedes 4:ti paris in ♂ cephalothorace $3\frac{1}{4}$ — $3\frac{1}{2}$, in ♀ circa 3:plo longiores; calcar partis tibialis palporum in ♂ æque longum atque ipsa pars tibialis. Long. cephalothoracis $4\frac{3}{4}$ —6 millim.

Such female specimens of *G. montana* as in colour resemble *G. muscorum* (see the next following species), are most easily distinguished from this latter by the distance between the anterior lateral eyes and the border of the clypeus not being, as in *G. muscorum*, double so great as the eye's diameter.

G. montana I have myself met with at Stockholm and Upsala; it has been found in Gotska Sandön off the coast of Gotland by EISEN and STUXBERG; from Finnland I have received specimens from AL. v. NORDMANN.

Pythonissa occulta C. KOCH is probably only a young specimen of *G. lucifuga*, which varies so greatly in the colour of the legs.

Drassus lucifugus BLACKW. (Spid. of Gr. Brit., I, p. 105, Pl. VI, fig. 62) is not the same as *G. lucifuga* (WALCK.), but a separate species, to which I shall hereafter return.

(Pag. 351.) 2. *P. lugubris* [= *Gnaphosa muscorum* (L. KOCH) 1866].

Syn.: †1851. DRASSUS LUGUBRIS WESTR., Förteckn. etc., p. 47.

1866. PYTHONISSA MUSCORUM L. KOCH, Die Arachn.-fam. d. Drassiden, p. 14, Taf. I, figg. 9, 10.

This spider is not (Conf. L. KOCH, loc. cit., p. 8) the same species as *Pythonissa lugubris* C. KOCH (Die Arachn., VI, p. 60, Taf. CXCV, fig. 473), of which I myself captured a ♀ *ad.* at St Moritz in Ober Engadin (Switzerland); but on the other hand it is identical

with *Pythonissa muscorum* L. KOCH, as I find established by the comparison of WESTRING's type-specimen with specimens from Finland, which Dr KOCH has identified as his *P. muscorum*. With regard to WESTRING's statement of the similitude in the spine-armature of the legs between *P. lugubris* WESTR. and *G. lucifuga*, as also L. KOCH's remarks on the subject loc. cit., p. 14, we may refer to what has been said above (p. 188) relative to the spines on the legs of the last mentioned species.

L. KOCH's statements concerning the spine-armature of his *P. muscorum*, especially as regards the spines on the tibiae of the 3rd pair, correspond accurately with WESTRING's specimen. Nevertheless that armature is variable: one of my specimens has e. g. on the thighs of the 1st pair above 1, 1 and in front 1, 1 (not only 1) spines.

The male of this species is immediately recognizable by the bulbus having near its apex, on the under side, a very large forward directed, almost S-formed hook.

(Pag. 352.) 3. *P. femoralis* [= *Gnaphosa bicolor* (HAHN) 1831].

- Syn.*: 1831. DRASSUS BICOLOR HAHN, Die Arachn., I, p. 123, Taf. XXXVI, fig. 94.
 1832. „ NOCTURNUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 136: Var. c (ad part.).
 1834. FILISTATA FEMORALIS REUSS, Zool. Misc., Arachn., p. 201 (206), Taf. XIV, fig. 5.
 1839. PYTHONISSA TRICOLOR C. KOCH, Die Arachn., VI, p. 67, Taf. CXCVII, fig. 479.
 ?1843. „ FULIGINEA ID., ibid., X, p. 120, Taf. CCCLVI, fig. 834.
 1866. „ TRICOLOR L. KOCH, Die Arachn.-fam. d. Drassiden, p. 24, Taf. I, figg. 16-18.
 1867. „ „ OHL., Aran. d. Prov. Preuss., p. 96.

WESTRING takes up under this species with an interrogation *Pythonissa fusca* C. KOCH (Die Arachn., VI, p. 56, Taf. CXCV, fig. 471), which is evidently an error, for *G. fusca*, according to L. KOCH (loc. cit., p. 36), who examined the type-specimen of the species, is a much larger spider, as large as smaller individuals of *G. lucifuga*. But both C. and L. KOCH appear to me to have committed an equally great mistake in referring *Filistata femoralis* REUSS, which is compared by REUSS to his *Filistata atra*, and is therefore a small species, to *G. fusca* (C. KOCH). WALCKENAER (H. N. d. Ins. Apt., I, p. 613)

refers it erroneously to *G. lucifuga*. — I see no reason to doubt that *Fil. femoralis* is identical with the species here described by WESTRING; and that this again is the same as *Pyth. tricolor* L. KOCH, I collect from L. KOCH's accurate description and from specimens in my cabinet, which he has himself identified as belonging to *P. tricolor*, under which name I have also received specimens of WESTRING's *Pyth. femoralis* from Dr OHLERT.

Drassus bicolor HAHN is referred by L. KOCH (loc. cit., p. 151) to *Melanophora electa* C. KOCH (Die Arachn., VI, p. 83, Taf. CC, fig. 490), which he therefore calls *Mel. bicolor*; but this cannot be right, partly because according to HAHN *D. bicolor* is 3 lines long (which is also the length C. KOCH gives for his *Pythonissa bicolor*), whereas *Mel. electa* is a much smaller spider (according to C. KOCH it is but $1\frac{3}{4}$ lines long), partly because it is evident from the position of the eyes in HAHN's figure, that his *D. bicolor* is no *Melanophora*, but a *Pythonissa* or *Gnaphosa*. C. KOCH also, who first (Uebers. d. Arachn.-Syst., 1, p. 17) referred *D. bicolor* HAHN to *Melanophora*, has subsequently (ibid., 5, p. 28) taken it up as a species of his genus *Pythonissa*. I therefore adopt the view of those authors, WALCKENAER, WESTRING etc., who consider *Drassus bicolor* HAHN as synonymous with *Pythonissa tricolor* C. KOCH or *femoralis* (REUSS), WESTR. — In one of my specimens the anterior metatarsi have on the under side not only two spines nearer the base, but also one at the extremity. The cephalothorax appears to me to be bounded at its edge rather by a narrow hem ("Umschlag" L. KOCH) than a fine border ("Kante"), at least it exhibits that appearance in some specimens preserved in spirits. — *G. bicolor* is one of the species, which SUNDEVALL loc. cit. has put together as varieties of *Melanophora nocturna* (LINN.).

Drassus bicolor COSTA 1835 (Cenni zoologici, p. 64) is quite a different spider, on which vid. infra sub *Melanophora nocturna* WESTR.

(Pag. 353.) 4. **P. fumosa** [= *Gnaphosa fumosa* (C. KOCH) 1843].

Syn.: 1843. PYTHONISSA FUMOSA C. KOCH, Die Arachn., X, p. 118, Taf. CCCLVI, fig. 832.

1851. DRASSUS FUMOSUS WESTR., Förteckn. etc., p. 47.

It appears to me very probable that this spider of WESTRING's is the same as C. KOCH's *Pyth. fumosa*, and I therefore preserve that specific name. WESTRING has kindly lent me his (unfortunately

imperfectly developed) type-specimens to examine. The species is easily distinguished from *G. bicolor* not only by its colour, but by the straighter back of the cephalothorax. The edge of the cephalothorax is bounded by a fine border, not by a narrow hem ("Um-schlag"). C. KOCH also says of his *Pyth. fumosa*: "Vorderleib mit flach geschärften Seitenkanten." The spine-armature of the legs is such as L. KOCH (loc. cit., p. 35) attributes to *G. lapponum* (L. KOCH), accordingly on f. inst. the tibiae of the 3rd pair above 1, before 1, 1, behind 1, 1, below 2, 2, 2 spines. In other respects this species is widely separated from *G. lapponum* (L. KOCH), of which I have seen a ♀ *ad.* kindly lent me by Dr KOCH: the cephalothorax is much narrower in front, and has black side-borders; the back of the mandibles is almost straight; the area of the 4 central eyes is a little broader behind than before, the legs not of a uniform rusty brown colour etc. ¹⁾ — In *G. lapponum* the cephalothorax is of a dark and uniform rusty brown, the mandibles are at the base prominent and strongly arched, the area of the central eyes is somewhat broader before than behind; the legs appear to be shorter (those of the 4th pair are not fully 2½ times as long as the cephalothorax); the vulva is formed by a rather large, almost ()-formed area bordered by deep furrows, which is continued behind by a small lobe, and exhibits in front a large fovea.

A specimen of the in the Fauna of Sweden previously unknown *G. leporina* (L. KOCH) (loc. cit., p. 27, Tab. II, fig. 19) from Gotland, which Mr A. STUXBERG gave me, differs from *G. fumosa* by the cephalothorax having a distinct border-hem, and by the 3rd pair of legs being of about the same length as the 2nd pair etc.

1) I am in possession of an interesting *Gnaphosa*, which perhaps is the male of *G. fumosa*, and may here be shortly characterised:

G. fumosa (C. KOCH)? cephalothorace, abdomine femoribusque nigrofuscis, patellis et internodiis sequentibus paulullo clarioribus, nigricanti-luridis, maculis pulmonalibus testaceis; cephalothorace antice valde angustato, margine tenni in lateribus limitato. — ♂ *ad.* Long. c:a 6 millim.

Forma corporis fere omnino *Melanophoræ Petiverii* (*subterranea*), sed series oculorum postica, desuperne visa, fortiter recurva. Series oculorum anticorum paullo procurva: medii eorum, diametro suo inter se distantes, minores quam laterales antici, qui oblongi sunt et spatio parvo tantum a mediis remoti. Area 4 mediorum postice paullo latior quam antice, parum longior quam latior; medii postici majores sunt quam medii antici, deplanati, transverse positi; interstitium inter eos minus est quam inter medios anticos. Palporum pars patellaris dimidio longior quam latior, pars tibialis hac parte brevior et, a latere visa, latior, brevior quoque quam latior, apice supra in calcar productum forte, basi latum,

(Pag. 345.) XIV. MELANOPHORA [= *Melanophora* (C. KOCH) 1833
+ *Gnaphosa* (LATR.) 1804 *ad part.*].

On the genera *Melanophora* and *Gnaphosa*, see THOR., On Eur. Spid., p. 149 et seq.

(Pag. 355.) 1. *M. subterranea* [= *Melanophora Petiverii* (SCOP.) 1763
+ *Melanophora petrensis* C. KOCH 1839
+ *Melanophora tristis* N.].

M. Petiverii:

- Syn.: 1763. ARANEA PETIVERII SCOP., Ent. Carn., p. 398 (*salt. ad part.*).
1806. DRASSUS ATER LATR., Gen. Crust. et Ins., I, p. 87 (*ad partem*).
1832. „ NOCTURNUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.
f. 1831, p. 136: Var. a (*salt. ad part.*).
1833. MELANOPHORA SUBTERRANEA C. KOCH, in HERR-SCHAEFF., Deutschl.
Ins., p. 120, 20, 21 (*sec. C. KOCH, Die*
Arachn.).
1834. FILISTATA ATRA REUSS, Zool. Misc., Arachn., p. 197 (202), Pl.
XIV, fig. 2.
1839. MELANOPHORA SUBTERRANEA C. KOCH, Die Arachn., VI, p. 85, Taf.
CCI, figg. 491, 492.
1851. DRASSUS SUBTERRANEUS WESTR., Förteckn. etc., p. 47 (*salt. ad part.*).
1864. „ ATER BLACKW., Spid. of Gr. Brit., I, p. 106, Pl. VI,
fig. 63 (*salt. ad part.*).
1866. MELANOPHORA SUBTERRANEA L. KOCH, Die Arachn.-fam. d. Drassiden,
p. 170, Taf. VII, figg. 110–112.
1868. „ PETIVERII THOR., in EISEN et STUXB., Om Gotska
Sandön, p. 379.

M. petrensis:

- ?1839. MELANOPHORA PETRENSIS C. KOCH, Die Arachn., VI, p. 89, Taf.
CCII, figg. 494, 495).
1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden,
p. 167, Taf. VII, figg. 107–109.

acuminatum, anteriora versus et foras directum, cujus apex supra sub-impressus est paulloque deorsum (et introrsum) curvatus; clava magna, longior quam pars patellaris et tibialis conjunctim, æque saltem crassa atque femora 1:mi paris, mandibulisque multo crassior. Tarsi (sed non metatarsi) 4 anteriores scopula instructi. Long. cephalothoracis 3 millim., ped. 4:ti paris $7\frac{3}{4}$, 1:mi paris fere 7 millim., patella + tibia hujus paris $2\frac{1}{2}$ millim.

Ad Kissingen Bavarix marem unicum inveni. Fortasse ♂ *Python. fumosæ* WESTR.; in hac series oculorum anticorum fortius quidem procurva videtur, et oculi laterales magis rotundati (?), sed vix aliam differentiam, excepto femorum colore clariore in "*Pyth. fumosa*", inveno.

1) "*M. pratensis*" in the Plate is a lapsus calami for "*M. petrensis*".

The *Drassus ater* of most arachnologists is undoubtedly a collective species, which in the first place includes that in central and northern Europe most common species of the genus, *M. subterranea* C. et L. KOCH. That LATREILLE's and WALCKENAER's ¹⁾ *D. ater* includes this species as well as *M. atra* L. KOCH and *M. petrensis* ID., I consider as absolutely certain: I have specimens of all three species from the neighbourhood of Paris, with which I have been favoured by SIMON. As however the specific name *ater* has by established custom been assigned to that one among these species, which C. and L. KOCH call *M. atra*, that species ought to be allowed to retain the Latreillian name. A far older name, that with equal certainty includes *M. subterranea* C. et L. KOCH, is *Ar. Petiverii* SCOP. C. KOCH accepts it without any reservation as a synonym to his *M. subterranea*, and it is only to be regretted, that he did not at the same time allow the species to retain the specific name that he rightly considered as its eldest, and which we have no scruples in restoring.

Drassus nigrinus HAHN (Die Arachn., I, p. 123, fig. 93), is not a sure synonym of *M. Petiverii*. It is stated to be nearly 5 lines long — a length which is certainly never attained by *M. Petiverii*. *Ar. nigrita* FABR., referred to by HAHN, belongs to *M. pusilla* C. KOCH. — *Filistata atra* REUSS includes only *M. subterranea* or *Petiverii*.

WESTRING has under the name of *M. subterranea* united the two species, which L. KOCH calls *M. subterranea* and *M. petrensis*, as I see from specimens which he has obligingly sent me. The spider which is by WESTRING considered to be the same as *M. petrensis* C. KOCH (see following spec.), is a third species, which has not been described by L. KOCH; it is therefore probably *not* = the true *M. petrensis*, which cannot well have escaped the notice of L. KOCH, since, according to C. KOCH, it is "not rare" in Bavaria. WESTRING's determination of C. KOCH's *M. petrensis* appears indeed to be strengthened by the circumstance, that the fore thighs in this spider are by C. KOCH said to be *destitute of a pale transparent spot*; but this spot is *sometimes* wanting also in the *M. petrensis* of L. KOCH, and this author says (loc. cit., p. 167), that the want of such a spot is "no constant mark for the species, for which it is by various authors considered as a characteristic". — For these reasons I have, in preference to WESTRING's, adopted L. KOCH's determination of the *M. petrensis* of C. KOCH.

¹⁾ Faune Franç. Arachn., p. 162.

At the under side of the abdomen in *M. Petiverii* ♀, between the rima genitalis and the petiolum, is seen a large, shining surface, in which two (-formed furrows and fine costæ, curved against each other, enclose a large area broader behind and somewhat broader than it is long; this area is open in front, and is bounded behind by a ---formed furrow. Before this area are two large shallow, lanceolate or oval depressions diverging in front. — In *M. petrensis* the corresponding surface displays a somewhat similar area, which however is considerably smaller, especially narrower, almost lyre-formed, longer than broad; within this area, at its base, are two small costæ diverging more or less in front, almost in the form of a V. The tibial joint in *M. petrensis* ♂ is at the extremity, on the outer side, produced into a long, straight and pointed spur directed forward and reaching to about half the length of the lamina, and lying close upon it; also in *M. subterranea* ♂ the tibial joint is provided with such a spur, but in this species it is somewhat shorter and stronger, and has the extremity somewhat bent outwards.

In *M. petrensis* C. et L. KOCH the front pairs of legs do not differ as much in length from each other as in *M. Petiverii*, yet enough for the difference to be clearly visible; in one Swedish specimen e. gr. (a ♀ ad. identified by Dr KOCH) the 1st pair is 7, the 2nd 6½, the 3rd 6 and the 4th 8½ millim.

WESTRING states, that in his *M. subterranea* the anterior tibiæ are sometimes provided with a spine on the under side. I have never seen a true *M. Petiverii* or *M. petrensis* with spines on the fore-tibiæ, and therefore conclude, like L. KOCH, that the specimens in which WESTRING found this characteristic, belong to a separate species. I have lately received such a specimen, a dried ♀ ad. from Mr WESTRING, and it seems indeed to be distinguished from *M. Petiverii*, to which it is closely allied, not only by the different spine-armature, but also by the metatarsi being of the same black or deep blackish brown colour as the tibiæ; only the tarsi are paler, of a rusty brown. The form of the vulva cannot be well distinguished in this specimen. I call the species *Melanophora tristis* 1).

1) *Melanophora tristis* N. Nigra, sub-opaca, femorum anticorum et palporum partis femoralis macula magna translucenti basique partis patellaris palporum pallidis, tarsis tantum ferrugineo-fuscis; tibiæ 4 anterioribus subtus versus medium spina singula armatæ; oculi medii postici non majores quam laterales postici. — ♀ ad. Long. c:a 7½ millim.

Cephalothorax c:a 3⅓ millim. longus, fere longior quam patella + tibia 4:ti paris, qui tarso suo pedibus 1:mi paris longiores sunt. (Long. pedum 1:mi

(Pag. 356.) *M. petrensis* [= *Melanophora mærens* N.].

Syn.: †1851. DRASSUS PETRENSIS WESTR., Förteckn. etc., p. 47.

This is quite a different species from that, which according to L. KOCH ¹⁾ is the *M. petrensis* of C. KOCH ²⁾, and for which I retain his name (see preced. spec.): that spider has *no* spine on the tibiæ of the 2nd pair, and is also distinguished by an entirely different form of the vulva (see L. KOCH's figure, loc. cit., fig. 107, and our description above). The vulva in WESTRING's *M. petrensis* closely resembles the figure given by L. KOCH of that organ in his *M. præfica* (loc. cit., p. 155, Taf. VI, fig. 97), but it is not narrower behind than before, and behind the two shepherds-crook-like [∩] costæ (which are shorter than in the figure referred to, as also more semicircular) one sees a little reddish brown, almost rhomboidal area bounded by fine furrows, with the obtuse angle forward, behind which the low costa enclosing the whole vulva, and which is slightly rounded, low and broad behind, is slightly depressed in the middle. WESTRING's *M. petrensis* has, under the tibiæ of the 2nd pair near the middle, *one* spine, and under those of the 1st pair *none*. *M. præfica* is on the contrary stated to have 1, 1 spines under *both* the first pairs' tibiæ. The posterior central eyes do not appear to me larger than the posterior lateral; the interval between them is at least as great as that between the anterior central eyes; the area of the 4 central eyes is evidently broader behind than before. The cephalothorax is as long as the patella and tibia of the 4th pair together, the length

paris 8, 2:di fere 7, 4:ti 9½ millim.). Tarsi et metatarsi 4 antici scopula densa præditi. Area oculorum mediorum paullo longior quam latior, postice latior quam antice; medii postici æque saltem longe inter se distantes atque medii antici, qui spatium oculi diametrum æquanti inter se remoti sunt. Mandibulæ setis formâ ordinariâ sparsæ. Forma vulvæ in specimine viso non extricanda; a vulva *M. petrensis* L. KOCH forsitan parum diversa(?). Totum fere corpus cum metatarsis nigrum; abdomen supra cyaneum colorem sentit, in reliquis corporis partibus in picuum exit color, præsertim subtus. — Præterea cum *M. Petiverii* omnibus fere numeris congruere videtur hæc species. A *M. atra* (LATR.) differt spina non tantum sub tibiis 2:di, sed sub 1:mi quoque paris. *M. lutetiana* L. KOCH (Die Arachn.-fam. d. Drassiden, p. 157, Taf. VI, fig. 100) qui tibiis anticas ut in *M. tristi* aculeatas habet, metatarsis et tarsis fusco-testaceis, oculis mediis posticis multo majoribus quam reliquis omnibus etc. differre videtur.

Ad Gothoburgum Sueciæ a Cel. WESTRING inventa.

1) Die Arachn.-fam. d. Drassiden, p. 167, Taf. VII, figg. 107—109.

2) Die Arachn., VI, p. 89, Taf. CCII, figg. 494, 495.

of which pair exceeds that of the 1st pair by the length of a *tarsus* (the 1st pair is 6, the 4th 7 millim.). The surface of the cephalothorax is finely and closely chagrined, but shining. — The species differs from *M. atra* (LATR.), L. KOCH, which also has one spine under the tibiæ of the 2nd pair only, by a quite different form of the vulva (in *M. atra* this organ very much resembles the vulva of *M. petrensis* L. KOCH), by the (always?) totally black thighs, by the maxillæ *not* being broadly truncated at the apex, etc. The tibia of the 3rd pair has before 1, 1, behind 2, 1, beneath 2, 2, 2 spines. — Of this (WESTRING's) spider I have only seen one dried but excellently preserved specimen, which WESTRING lent me to examine. Of *M. petrensis* L. KOCH and *M. atra* ID. I have specimens, which Dr KOCH has himself had the kindness to identify for me. As I cannot recognize WESTRING's *M. petrensis* among the species described by L. KOCH, I have given it a new name, *M. mærens*.

A *Melanophora*-female in my collection, which I captured at Upsala, agrees perfectly with L. KOCH's description and figures of his *M. serotina* (loc. cit., p. 185, Taf. VIII, figg. 123—125), so that this species also belongs to our Fauna ').

1) Mr L. v. KEMPELEN of Vienna, who has kindly favoured me with many Austrian and other Arachnoidea, and much valuable information, for which I beg leave hereby to express my thankfulness, has sent me a spider from Austria very nearly related to the preceding, which I call *M. erebea*. It may be recognized by the following characteristics:

Melanophora erebea N. Nigra, palpis ferrugineis basi rufescentibus, pedibus nigris, femoribus 1:mi paris macula magna testaceo-ferruginea, metatarsis piceis, tarsis rufescentibus; tibiæ 2:di paris aculeo subtus armatæ; area vulvæ antice impressione magna cordiformi, postice acuminata et per costam longitudinalem bipartita. — ♀ ad. Long. c:a 7 millim.

M. Petiverii (subterraneæ) simillima, forma vero vulvæ cet. distincta. Cephalothorax $3\frac{1}{4}$ millim. longus, patellam cum tibia pedum quarti paris longitudine æquans, parum nitidus, pilosus. Area oculorum mediorum paullo longior quam latior, postice latior quam antice; oculi laterales postici paullo majores quam medii, qui inter se spatio paullulo minore disjuncti esse videntur, quam quo distant medii antici inter se. Mandibulæ nigræ, apice piceæ. Sternum, labium et maxillæ nigro-piceæ, hæ apice sub-testaceo intus (minus late quam in *M. Petiverii*) truncatæ. Pedes 1:mi paris $8\frac{1}{2}$, 2:di $7\frac{1}{2}$, 3:tii $6\frac{1}{2}$, 4:ti 10 millim. longi, 4:ti paris igitur pedes 1:mi paris longitudine tarsi tantum superantes. Tibiæ 1:mi paris non aculeatæ, 2:di paris aculeum unicum subtus in medio habent; tibiæ 3:tii paris antice 1, 1, 1, postice 1, 1, subtus 2, 2, 2 aculeos habent. Abdomen pure nigrum, opacum, fusco-pilosum: mamillæ nigræ. Vulva ex area constat oblonga ferrugineo-fusca, postice sub-angustata et rotundata, quæ antice fovea magna, oblonga, cordiformi, parum profunda, postice acuminata impressa

(Pag. 357.) 3. *M. pusilla* [= *Melanophora nigrita* (FABR.) 1775].

Syn.: 1775. ARANEA NIGRITA FABR., Syst. Ent., p. 432.

1833. MELANOPHORA PUSILLA C. KOCH. in HERR.-SCHIEFF., Deutschl. Ins.,
120, 22 (see C. KOCH, Die Arachn.).

1839. " " ID., Die Arachn., VI, p. 90, Taf. CCII,
fig. 496.

1843. " " ID., ibid., X, p. 121, Taf. CCCLVI, fig. 835.

1851. DRASSUS PUSILLUS WESTR., Förteckn. etc., p. 48.

1861. " " BLACKW., Spid. of Gr. Brit., I, p. 107, Pl.
VI, fig. 64.

1866. MELANOPHORA PUSILLA L. KOCH, Die Arachn.-fam. d. Drassiden, p.
179, Taf. VII, figg. 117—119.

That FABRICIUS' "*Ar. nigrita*, *atra; pedes apice pallidi*" is identical with the *Melan. pusilla* of C. KOCH, has been rightly observed, and repeatedly affirmed by that author (Die Arachn., VI, p. 87, 90), and yet he has given it a new name. Such a proceeding of course cannot be approved, and we therefore restore to this spider its oldest specific name, *nigrita*.

A ♂ *jun.* communicated by WESTRING, exhibits no sensible difference from a fullgrown ♀, which I captured at Kissingen in Bavaria, and which L. KOCH has declared to be a *M. pusilla* C. et L. KOCH. The area occupied by the vulva presents, about the middle, two strong, shining, almost J-formed costæ curved from each other and rapidly diverging backwards, and behind them another fine transverse ^-formed elevation or costa.

Of the very nearly allied *M. violacea* L. KOCH¹⁾, which differs from *M. nigrita* or *pusilla* by its more shining cephalothorax, by a somewhat different spine-armature and by its abdomen glittering in green and purple etc., I have a ♂ *jun.* captured at Upsala. It is this specimen that in Rec. crit. Aran., p. 110, I have erroneously taken up under the appellation of *M. pusilla*.

(Pag. 357.) 4. *M. nocturna* [= *Gnaphosa nocturna* (LINN.) 1758].

Syn.: 1758. ARANEA NOCTURNA LINN., Syst. Nat., Ed. 10, I, p. 621.

1765. " " STRØM, Beskr. ov. Norske Ins., 1ste Stykke, in
Det Trondhiemske Selsk. Skrif., III, p. 433.

est; hæc fovea costa media longitudinali in duas dividitur; pone foveam leviter impressa est area vulvæ, punctis duobus parvis obscurioribus impressis ad apicem.

In Austria a Cel. v. KEMPELEN inventa.

1) Die Arachn., VI, p. 71, Taf. CXCVIII, fig. 482; L. KOCH, loc. cit., p. 159.

1830. DRASSUS GNAPHOSUS WALCK., Faune Franç., Arachn., p. 159.
 ? 1830. „ NOCTURNUS ID., *ibid.*, p. 157 (*saltem ad part.*).
 1832. „ „ SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.
 f. 1831, p. 136 (*ad part.: Var. b.*).
 1834. FILISTATA MACULATA REUSS, Zool. Misc., Arachn., p. 200 (205), Pl.
 XIV, fig. 4.
 1837. PYTHONISSA HOLOBERA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 16.
 1839. „ MACULATA ID., Die Arachn., VI, p. 61, Taf. CXCVI,
 figg. 474, 475.
 1851. DRASSUS MACULATUS WESTR., Förteckn. etc., p. 47.
 1856. PYTHONISSA NOCTURNA THOR., Rec. crit. Aran., p. 87.
 1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p.
 37, Taf. II, figg. 27—30.
 ? 1867. „ COMATA OHL., Aran. d. Prov. Preuss., p. 98.
 1868. GNAPHOSA NOCTURNA THOR., in EISEN et STUXBERG, Om Gotska
 Sandön, p. 379.

In my Rec. crit., loc. cit., I have endeavoured to show, that the *Ar. nocturna* of LINNÆUS is identical with C. KOCH's *Pyth. maculata*, and not with e. g. *Steatoda bipunctata*, to which it has been referred by that author. Already in 1765 *Pyth. maculata* C. KOCH was described by STRÖM, loc. cit., under the name of *Ar. nocturna* LINN. — *Ar. nocturna* SCHRANCK (Enum. Ins. Austr., p. 528), which "habitat in domibus rarius" can hardly belong to this species. — OHLERT's synonym is uncertain, for he says, that the thighs of his *Pyth. comata* are black, whereas in *G. nocturna* the thighs of both the hind pairs of legs are generally, at least in ♀, reddish, with the extremity only black (C. KOCH however mentions and figures a ♂, in which all the thighs are black); moreover OHLERT says nothing about the two yellow or white spots immediately above the anus, which however might have been worn off in his specimen, as is often the case (they are not mentioned by LINNÆUS either). — *Drassus Linnæi* SAY. et AUD. '), which WALCKENAEER cites under his *D. gnaphosus*, is certainly another species.

As to WALCKENAER'S *Drassus nocturnus* (H. N. d. Ins. Apt., I, p. 615) this species, with exclusion perhaps of the large, "6 lines" long specimen, which he once had caught²⁾, is probably not different

1) Descr. de l'Égypte, Éd. 2, XXII, Arachn., p. 384, Pl. V, fig. 7.

2) In Faune Franç. Arachn., p. 158 he says of *D. nocturnus*: "je l'ai prise une seule fois dans toute sa grandeur [6 lines]... Elle était dans une feuille de chêne qu'elle avait roulée et enduite de soie".

The description given by COSTA (Cenni zoologici, p. 64) of his *Drassus bicolor* 1835 agrees in several points with that of *D. nocturnus* WALCK.; it is

from his *D. gnaphosus* or *G. nocturna* (LINN.). In Faune Franç., Arachn., p. 160, WALCKENAER himself appears to suspect that *D. gnaphosus* and *D. nocturnus* might belong to one and the same species; he says that the *female* of the former differs *only* from this latter in the colour of the band of the abdomen nearest the cephalothorax being yellow, not white as in *D. nocturnus*, and in that the spots on the back of the abdomen are in *D. gnaphosus* four in number, not two only. That the *male* of "*D. gnaphosus*" has 4 white spots on the back of the abdomen, he also remarks. "Ceci pourrait faire soupçonner que cette espèce (*D. gnaphosus*) n'est qu'une variété de la précédente (*D. nocturnus*); mais comme j'ai trouvé deux ou trois fois le nocturne avec les deux taches seulement, j'ai dû distinguer comme espèce les individus qui en avaient quatre. Le naturaliste qui aura occasion d'en examiner un plus grand nombre, et qui observera leurs moeurs, pourra seul décider si cette distinction est exacte." (WALCK., loc. cit.).

See also the next following species, *M. variana* WESTR.

(Pag. 359.) 5. *M. variana* [= *Gnaphosa variana* (C. KOCH) 1839.]

Syn.: †1832. DRASSUS NOCTURNUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 136: Var. c (ad part.).

1839. PYTHONISSA VARIANA C. KOCH, Die Arachn., VI, p. 65, Taf. CXCVII, fig. 478.

1851. DRASSUS VARIANUS WESTR., Förteckn. etc., p. 48.

WALCKENAER (H. N. d. Ins. Apt., II, p. 485) takes up, erroneously no doubt, C. KOCH's *Pyth. variana* as a synonym to his *Drassus nocturnus*, on which see preceding species. The colour of *G. variana* is very different from that of *D. nocturnus* WALCK.: in Faune Franç., Arachn., p. 157, the cephalothorax is stated to be in this latter species "d'un noir rougeâtre", with "une bande longitudinale de poils gris depuis la tête jusque à la pointe postérieure" etc. Conf. the description in H. N. d. Ins. Apt., I, p. 615.

stated to have a black cephalothorax, covered with coarse hairs, among which are some of a white colour; its legs are reddish, with exception only of the thighs, which are black; the abdomen is black, with two white spots near the base united into an angle, two others, *linear and placed transversely*, one on each side, in the middle, and two at the extremity, smaller than the others and almost round. It lives in tubes of silk, which it fabricates on the leaves of plants. It was found "sulle foglie dell' *Inula viscosa*, nella Solfatara" (Naples). — For this species I propose the name *Gnaphosa phyllobia*.

(Pag. 360.) XV. DRASSODES [= *Drassus* (WALCK.) 1805 *ad partem*].

On this genus see THOR., On Eur. Spid., p. 147.

(Pag. 361.) 1. *D. lapidicola* [= *Drassus lapidicola* WALCK. 1802].

- Syn.*: 1802. ARANEA LAPIDICOLA [LAPIDOSA] WALCK., Faune Par., II, p. 222.
 1804. " " LATR., H. N. d. Crust. et d. Ins., VII, p. 225.
 1805. CLUBIONA " [LAPIDICOLENS] WALCK., Tabl. d. Aran., p. 44.
 1833. " LAPIDARIA HAHN, Monogr. Aran., 7, Tab. I, fig. c.
 ?1834. FILISTATA INCERTA REUSS, Zool. Misc., Arachn., p. 203 (208), Pl. XIV, fig. 7.
 1837. DRASSUS LAPIDICOLA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 18.
 ?1837. " INCANUS ID., *ibid.*
 1839. " LAPIDICOLA ID., Die Arachn., VI, p. 28, Taf. CLXXXVII, figg. 450, 451.
 1851. DRASSODES LAPIDICOLA WESTR., Förteckn. etc., p. 48.
 1861. DRASSUS " [LAPIDICOLENS] BLACKW., Spid. of Gr. Brit., I, p. 116, Pl. VI, fig. 70.
 1866. " " L. KOCH, Die Arachn.-fam. d. Drassiden, p. 126, Taf. V, figg. 80, 81.
 1866. " " KEMPEL., Bemerk. üb. Spinn. etc., in Verhandl. d. zool.-bot. Gesellsch. in Wien, XVII, p. 545.

LATREILLE (loc. cit.) has amended the ridiculous name *lapidosa* to *lapidicola*, which reading of the name has been with reason adopted by most modern arachnologists in preference to *lapidicolens*, afterwards employed by WALCKENAER himself. As *lapidicola* is not a new name, but only a corrected form of the original nomen specificum, "WALCK." ought to be retained as authority for it. Conf. THOR., On Eur. Spid., p. 14. — *D. incanus* C. KOCH is certainly only an imperfectly developed specimen of *D. lapidicola*; it is not mentioned by C. KOCH in Die Arachn.

(Pag. 363.) 2. *D. villosus* [= *Drassus villosus* THOR. 1856].

- Syn.*: †1851. DRASSODES SEVERUS WESTR., Förteckn. etc., p. 48.
 1856. DRASSUS VILLOSUS THOR., Rec. crit. Aran., p. 109.
 1866. " " L. KOCH, Die Arachn.-fam. d. Drassiden, p. 136, Taf. VI, fig. 86.

Drassus severus C. KOCH¹⁾, which WESTRING with an interroga-

¹⁾ Die Arachn., VI, p. 22, Taf. CLXXXVI, fig. 446; X, p. 126, Taf. CCCLVII, fig. 838.

tion places under this species, is a wholly different one. Vid. L. KOCH, loc. cit.

(Pag. 365.) 3. *D. pubescens* [= *Drassus pubescens* THOR. 1856].

Syn.: 1856. DRASSUS PUBESCENS THOR., Rec. crit. Aran., p. 110.

1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p. 123, Taf. V, figg. 77—79.

Under this species WESTRING, though with an interrogation, takes up *Drassus cinereus* HAHN¹⁾ and C. KOCH²⁾: as however KOCH expressly states, that in *D. cinereus* the cephalothorax has no black border, I have not ventured to receive the specific name *cinereus* as belonging to the spider now in question. See also *D. gracilis* WESTR., next following.

(Pag. 366.) 4. *D. gracilis* [= *Drassus gracilis* (WESTR.) 1861].

WESTRING's type-specimen (a dried and considerably injured ♀ *jun.*) is the only one I have seen of this species. The eye-area is not fully twice as broad as it is long. The distance between the anterior central eyes is not at all, that between the posterior central eyes scarcely perceptibly, greater than the eye's diameter; between the anterior lateral and central eyes the distance is less than half an eye's diameter. The cephalothorax is shorter than patella + tibia of the 4th pair of legs, but not shorter than these joints together of the 1st pair.

May not this species be identical with *Drassus cinereus* HAHN et C. KOCH (see preceding species, *D. pubescens* WESTR.), which, like *D. gracilis*, is without black border to the cephalothorax?

(Pag. 367.) XVI. ARGYRONETA [= *Argyroneta* LATR. 1804].

Vid. THOR., On Eur. Spid., p. 137.

(Pag. 368.) 1. *A. aquatica* [= *Argyroneta aquatica* (CLERCK) 1757].

Syn.: 1757. ARANEUS AQUATICUS CLERCK, Sv. Spindl., p. 143, Pl. 6, tab. 8.

1758. ARANEA AQUATICA LINN., Syst. Nat., Ed. 10, I, p. 623.

1) Die Arachn., I, p. 124, Taf. XXXVI, fig. 95.

2) Ibid., X, p. 128, Taf. CCCLVIII, fig. 840.

1805. ARGYRONETA AQUATICA WALCK., Tabl. d. Aran., p. 84.
 1841. " " C. KOCH, Die Arachn., VIII, p. 60, Taf. CCLXIX, fig. 636.
 1861. " " BLACKW., Spid. of Gr. Brit., I, p. 137, Pl. VIII, fig. 87.

(Pag. 370.) XVII. ANYPHÆNA [= *Anyphæna* SUND. 1833].

Vid. THOR., On Eur. Spid., p. 143.

(Pag. 371.) 1. *A. accentuata* [= *Anyphæna accentuata* (WALCK.) 1802].

- Syn.*: 1802. ARANEA ACCENTUATA WALCK., Faune Par., II, p. 226.
 1805. CLUBIONA " ID., Tabl. d. Aran., p. 42.
 1832. AGELENA OBSCURA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 128.
 1833. ANYPHÆNA ACCENTUATA ID., Consp. Arachn., p. 20.
 1833. CLUBIONA PUNCTATA HAHN, Monogr. Aran., 7, Pl. I, fig. a.
 1834. " " ID., Die Arachn., II, p. 8, Taf. XXXIX, fig. 99.
 1861. " ACCENTUATA BLACKW., Spid. of Gr. Brit., I, p. 131, Pl. VIII, fig. 83.
 1866. ANYPHÆNA ACCENTUATA L. KOCH, Die Arachn.-fam. d. Drassiden, p. 219, Taf. IX, figg. 143-145.

(Pag. 373.) XVIII. AMAUROBIUS [= *Amaurobius* (C. KOCH) 1837].

Vid. THOR., On Eur. Spid., p. 126.

(Pag. 374.) 1. *A. ferox* [= *Amaurobius ferox* (WALCK.) 1830].

- Syn.*: 1830. CLUBIONA FEROX WALCK., Faune Franç., Arachn., p. 150, Pl. 7, fig. 7.
 1837. AMAUROBIUS CRYPTARUM C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 15.
 1839. " FEROX ID., Die Arachn., VI, p. 41, Taf. CXCI, figg. 460, 461.
 1861. CINIFLO FEROX BLACKW., Spid. of Gr. Brit., I, p. 142, Pl. IX, fig. 90.
 1868. AMAUROBIUS FEROX L. KOCH, Die Arachn.-gatt. Amaurob., Cælotes u. Cybæus, in Abhandl. d. Naturhist. Gesellsch. zu Nürnberg, 1868, p. 11.

WALCKENAER and C. KOCH cite under this species SCHÆFFER, Ic. Ins. Ratisb., II, Taf. CLVIII, fig. VI (*Ar. novem-maculata* PANZ. 1804, Syst. Nomencl., p. 244); but this citation appears to me too uncertain, and I think that SCHÆFFER's figure may as well represent *Meta Menardi* (LATR.) I have therefore not adopted the specific name *novem-maculata*.

(Pag. 376.) 2. *A. atrox* [= *Amaurobius fenestralis* (STRØM) 1768].

- Syn.: 1768. ARANEA FENESTRALIS STRØM. Beskr. ov. Norske Ins., 2 St., in Det Trondhiemske Selsk. Skrift., IV, p. 362, Pl. XVI, fig. XXIII.
1776. " " MÜLL., Zool. Dan. Prodr., p. 194.
1778. " ATROX DE GEER, Mém., VII, p. 253, Pl. 14, figg. 24, 25.
1805. CLUBIONA ATROX WALCK., Tabl. d. Aran., p. 44.
1837. AMAUROBIUS ATROX C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 15.
1841. CINIFLO " BLACKW., The differ. in the numb. of eyes etc., p. 607.
1843. AMAUROBIUS " C. KOCH, Die Arachn., X, p. 116, Taf. CCCLV, fig. 831.
1861. CINIFLO " BLACKW., Spid. of Gr. Brit., I, p. 140, Pl. IX, fig. 88.
1868. AMAUROBIUS " L. KOCH, Die Arachn.-gatt. Amaur., Coel. u. Cyb., p. 7.
1870. " FENESTRALIS THOR., On Eur. Spid., p. 126.

WALCKENAER is perhaps the only writer, who under *Ar. atrox* DE GEER takes up STRØM's *Ar. fenestralis*. But neither he nor any other of the arachnologists (O. F. MÜLLER, GÆZE), who knew of STRØM's work, mentions the author's name or the title of his work ("Beskrivelser over Norske Insekter", Descriptions of Norwegian Insects), but only the periodical ("Det Trondhiemske Selskabs Skrifter", "Acta Nidros.") in which it was published. STRØM's specific name has however priority to that of DE GEER, and must accordingly be restored. STRØM's description of *Ar. fenestralis* "macula abdominis nigra trigona, cingulo luteo", as the diagnosis runs, is made from a ♂ *jun.*; it is followed by a figure, which leaves no room for a moment's doubt as to what species is intended¹⁾.

It is probable that the south-European *A. obustus* L. KOCH (loc. cit., p. 28) has been sometimes confounded with *A. fenestralis* or *atrox*; at least I have received specimens of it from northern Italy under the name of *A. atrox*. In the ♂ *ad.* of *A. obustus* the inner process of the tibial joint is longer, more pointed, as also stronger, more curved in an S-form, and directed more inwards, than in *A. fenestralis*. The middle process, which springs from the base of the inner, is fine and pointed, much longer than it is broad at the base,

1) *A. fenestralis* is the only species of the genus *Amaurobius*, which is commonly met with in the Scandinavian peninsula, where beside this only one more species, *A. ferox*, has been observed, and that only on one spot (Göteborg) and very rarely.

whereas in *A. fenestralis* it rises *between* the inner and outer, is *short and triangular, somewhat blunt*, not longer than it is broad at the base, and has a little tooth on the under (fore) side, which is absent in *A. obustus*.

Very similar to *A. fenestralis* is *A. similis* (BLACKW.) 1861 (Spid. of Gr. Brit., I, p. 141, Pl. IX, fig. 89), but it is distinguishable by the tibial joint's middle process in ♂ being cloven into *two* points, an upper and an under, and by the vulva being broader behind than before, not the reverse, as in *A. fenestralis*. The spine-armature on the legs is also somewhat different, the thighs of the 1st pair in *A. fenestralis* having only 2, but in *A. similis*, 5 spines¹⁾.

1) The following species of the genus *Amaurobius* seem to be as yet undescribed:

Amaurobius Scopoli N. Mas: Oculi laterales antici paullo majores quam laterales medii, qui spatio inter se distant, quod oculi diametrum non æquat. Palporum pars tibialis supra procursus duos ostendit, quorum exterior dimidio longior quam latior est, in apice angulis rotundatis truncatus, ibique subtus dilatatus; procursus interior, cum exteriore angulum rectum formans, eo paullo brevior at duplo latior est, non tam longus atque latus, in apice oblique truncatus, angulis rotundatis; ipse apex partis tibialis subtus in procursum brevem productus. Femora pedum 1:mi paris aculeis saltem 4: 1, 1 supra, 1 antice, 1 postice; femora 2:di paris aculeis circiter 7 armata. Cephalothorax et sternum luteo-fusca, palpi ejusdem coloris, partibus duabus ultimis fuscis; pedes luteo-fusci, immaculati, coxis subtus clarioribus; abdominis pictura ex tribus maculis longitudinalibus pallidis in dorso antice et pone eas serie utrinque macularum obliquarum pallidarum constare videtur, ideoque picturæ *A. ferocis* sat similis. Long. cephaloth. 5, abdominis 4½, pedum 1:mi paris 20½, 2:di 16½, 3:tii 12, 4:ti 16½ millim.

Femina (an hujus speciei?): Cephalothorax 5, abdomen 6, pedes 1:mi paris 13, 2:di 11½, 3:tii 9½, 4:ti 13 millim. longi. Oculi laterales antici anticis mediis majores. Femora 1:mi paris aculeis saltem 2: 1 supra, 1 antice. Vulva fere ut in *A. jugorum* L. KOCH: aream format antice rotundatam, æque fere longam atque latam, quæ postice incisuram profundam, antice sinuatam (cordiformi-quadrangulam) ostendit, elevationem late cordiformem includentem: hæc elevatio ("Platte der Epigyne" L. KOCH) igitur postice acuminata, non, ut in *A. jugorum*, postice late et leviter rotundata. Color ut in ♂ fere, parte cephalica infuscata. *Amaurobio jugorum* ♀ (cujus ♂ ignotus est) hæc ♀ valde affinis videtur; in *A. jugorum* vero, secundum L. KOCH, forma vulvæ, ut diximus, paullo alia, et pedes 1:mi paris uno millim. longiores quam pedes 4:ti paris; in ♀ nunc descripta mihi omnino eadem longitudine esse videntur pedes parium 1:mi et 4:ti.

Ad Nicæam et Herculis Monæci Portum (*Monaco*) sub lapidibus hanc speciem inveni.

Amaurobius Cyrilli N. Mas: Oculi laterales antici majores quam medii antici, qui inter se spatio distant, quod oculi diametrum non æquat. Palporum pars tibialis supra procursus tres porrectos, paullo divaricantes, æque fere longos

(Pag. 377.) XIX. CHEIRACANTHIUM [= *Chiracanthium* C. KOCH 1839].

Vid. THOR., On Eur. Spid., p. 145.

(Pag. 378.) 1. *Ch. nutrix* [= *Chiracanthium nutrix* (WALCK.) 1802].

- Syn.*: 1802. ARANEA NUTRIX WALCK., Faune Par., II, p. 220 (*salt. ad part.*).
 1805. CLUBIONA NUTRIX ID., Tabl. d. Aran., p. 43 (*salt. ad part.*).
 1833. „ VIRESCENS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 267.
 ?1834. DRASSUS MAXILLOSUS REUSS, Zool. Misc., Arachn., p. 204 (209), Taf. XIV, fig. 8.
 ?1837. ANYPHÆNA NUTRIX C. KOCH., Uebers. d. Arachn.-Syst., 1, p. 18.
 ?1839. CHIRACANTHIUM NUTRIX ID., Die Arachn., VI, p. 9, Taf. CLXXXII, figg. 434, 435 (*ad part.*).
 ?1861. CLUBIONA NUTRIX BLACKW., Spid. of Gr. Brit., I, p. 134, Pl. VIII, fig. 85.

Under the name of *Clubiona* or *Cheiracanthium nutrix* several different species have by some authors been confounded: the large south-European form of *Cl. nutrix*, which already WALCKENAER (H. N. d.

habet: procurus exterior apice obtusus, sed non dilatatus; medius acuminatus, procuru exteriori parum longior; interior paullo longior quam reliqui duo, in apicem tenuem, sursum curvatum desinens. Pars tibialis subtus, interiora versus, in ipso apice procurum parvum porrectum ostendit. Femora 1:mi paris aculeis saltem 2, versus apicem sitis, instructa sunt, 1 supra, 1 antice. Cephalothorax, palpi et pedes lætius luteo-fusci, tibiis et metatarsis minus distincte fusco-annulatis; maxillæ et sternum quoque læte luteo-fusca, mandibulæ obscuriores. Abdomen nigricans, versus latera et subtus pallido-variatur, in dorso ordinibus duabus, versus anum appropinquantibus, macularum pallidarum, quarum duæ anteriores elongatæ sunt et longius a reliquis remotæ, quam hæc inter se. Cephalothorax $3\frac{1}{4}$, pedes 1:mi paris $10\frac{1}{2}$, 2:di $8\frac{1}{2}$, 3:tii $7\frac{1}{4}$, 4:ti $8\frac{1}{2}$ millim. longi.

Femina: Cephaloth. 4, pedes 1:mi paris $8\frac{1}{2}$, 2:di 7, 3:tii $6\frac{1}{2}$, 4:ti $7\frac{1}{2}$ millim. Vulva constat ex area antice rotundata, postice angustiore, paullo latiore quam longiore, quæ postice incisuram latam, sed non profundam, antice sinuatam habet, callum brevem transversum includentem: vulvæ *Amaurobii jugorum* L. KOCH igitur satis similis est, sed callus ille ("Die Platte") brevior est, et impressione media præditus esse videtur. Mandibulæ nigro-fuscæ; dorsum abdominis antice maculas duas longitudinales pallidas habet, formâ minus regulari, et aream nigram includentes, quæ area vestigia striæ mediæ pallidæ ostendit: pone maculas illas ordines duæ macularum obliquarum pallidarum versus anum appropinquantibus conspiciuntur.

Specimen adultum utriusque sexus ex Italia australi (Neapoli) benigne mecum communicavit Cel. CANESTRINI. — Ab *A. Erberi* L. KOCH (Die Arachn.-gatt. *Amaur.*, Cæl. u. Cyb., p. 21) certe diversa species.

Ins. Apt., I, p. 601) specially mentions, and which L. KOCH (Die Arachn. fam. d. Drassiden, p. 253) suspects to be different from *Ch. nutrix*, has by CANESTRINI and PAVESI ¹⁾ been, with good reason, described as a separate species under the name of *Ch. italicum*. Also the form here described by WESTRING, is specifically separated from *Ch. nutrix* L. KOCH ²⁾, as ZIMMERMANN ³⁾ has already observed. WESTRING's spider (of which I am in possession of fully developed specimens of both sexes determined by this author) ought in my opinion to retain the old Walckenaerian name, as neither WALCKENAER nor any other author before L. KOCH has mentioned the peculiar form of the mandibles, which characterizes *Ch. nutrix* L. KOCH ♂. According to L. KOCH, the tibial joint of the palpi in his *Ch. nutrix* ♂ — or *Ch. oncognathum*, as I propose to call that species — is three times as long as the patellar, and the process at the apex not cloven; the lamina is as long as the tibial joint, its spur as long as this joint (and therefore as the lamina itself), the mandibles "im letzten Drittheil kugelig aufgetrieben"; all the thighs are in *Ch. oncognathum* without spines. In *Ch. nutrix* (WALCK.) WESTR. ♂ on the contrary, the tibial joint of the male's palpi is scarcely more than double as long as the patellar, and the process at its apex slightly cloven; the lamina is at least as long as the tibial and patellar joints together, its spur is shorter than the lamina, and reaches with its extremity only to about the middle of the tibial joint, the mandibles are not globularly incrassated at the extremity, not more bent outwards than in e. gr. *Ch. carnifex* ♂. The thighs of the 1st pair have, as WESTRING's says, one spine (before); in one specimen the thighs of the 3rd pair also have a spine, behind, towards the apex, and in a third specimen (from Germany) the thighs of the 3rd pair have two and the thighs of the 4th pair one, towards the extremity.

The colour of *Ch. nutrix* (WALCK.), WESTR., seems to be exactly the same as that of *Ch. nutrix* C. KOCH (Die Arachn., loc. cit.): the abdomen in the only fullgrown Swedish male specimen I possess, is pale brownish yellow, approximating to olive, with a longitudinal reddish brown band, stretching from the base to the middle of the abdomen and pointed behind, which exhibits a tooth-like dilatation

1) Aran. Ital., p. 114; Catalogo sistem. degli Aran. Ital., in Archiv. p. la Zool., l'Anat. e la Fisiol., Ser. II, Vol. II (1870), Tav. IV, fig. 3.

2) Die europ. Art. d. Arachn.-gatt. Cheirac., in Abhandl. d. Naturhist. Gesellschaft. zu Nürnberg, 1864, p. 3; Drassiden, p. 248, Taf. X, figg. 158—160.

3) Verzeichn. d. Spinn. d. Umgeg. v. Niesky, p. 40.

on each side, near the middle, and is bounded by a somewhat lighter yellow edge; behind that band appears a large reddish spot, which without any determinate limits gradually fades into the ground-colour of the abdomen. The cephalothorax is somewhat shorter than the patella and tibia of the 4th pair together, the legs of the 1st pair are 5 times as long as the cephalothorax, and the tibia of that pair little more than three times as long as the patella. The mandibles are as long as the tarsi of the 1st pair. — The cephalothorax is $3\frac{3}{4}$ millim., the 1st pair of legs $18\frac{1}{2}$ (the tarsus $2\frac{1}{2}$ millim., the metatarsus $4\frac{1}{2}$, tibia $4\frac{3}{4}$, patella $1\frac{1}{2}$ millim.), 2nd pair $13\frac{1}{4}$ millim., 3rd pair $10\frac{3}{4}$, 4th pair 15 millim. (patella + tibia of 4th pair 5 millim.). — All this in the ♂.

In a fullgrown ♀ (from Finnland) the ground-colour of the abdomen is darker, olive-green, and the spot behind the longitudinal central band indistinct. In other respects the colour is precisely similar to that of ♂. The cephalothorax has, as in the ♂, a longitudinal depression at the posterior inclination. The thighs of the 3rd pair have also in this ♀ *two* spines at the apex, and those of the 4th pair *one* spine. (The spine-armature in *Ch. nutrita* is very variable, as in other nearly related species; in young specimens the spines on the thighs of the 3rd and 4th pairs are absent, sometimes even on those of the 1st pair). The cephalothorax is as long as the tibia and patella of the 4th pair together, the 1st pair is $3\frac{3}{4}$ times the length of the cephalothorax, and its tibia not 3 times as long as its patella. The mandibles are something longer than the tarsi of the 1st pair. (Cephalothorax 4 millim., 1st pair of legs 15, its tarsus 2, metatarsus $3\frac{2}{3}$, tibia $3\frac{1}{2}$, patella $1\frac{1}{2}$ millim; 2nd pair $11\frac{1}{2}$, 3rd pair $8\frac{1}{2}$, 4th pair 13 millim., its tibia + patella 4 millim.; mandibles somewhat over 2 millim.). The vulva has the form of a small, dark, almost semicircular elevation, which at its posterior more truncated edge exhibits a small deep fovea.

(Pag. 380.) 2. *Ch. erraticum* [= *Chiracanthium carnifex* (FABR.) 1775].

Syn.: ?1775. ARANEA CARNIFEX FABR., Syst. Ent., p. 436.

1802. „ ERRATICA WALCK., Faune Par., II, p. 219.

1805. CLUBIONA „ ID., Tabl. d. Aran., p. 43.

1806. „ NUTRIX LATR., Gen. Crust. et Ins., I, p. 92.

1833. „ DUMETORUM HAHN, Monogr. Aran., 7, Tab. I, fig. b.

1837. *BOLYPHANTES EQUESTRIS* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 9.
 1839. *CHEIRACANTHIUM CARNIFEX* ID., Die Arachn., VI, p. 14, Taf. CLXXXIV, figg. 438, 439.
 ?1861. *CLUBIONA ERRATICA* BLACKW., Spid. of Gr. Brit., I, p. 135, Pl. VIII, fig. 86.
 1866. *CHEIRACANTHIUM CARNIFEX* L. KOCH, Die Arachn.-fam. d. Drassiden, p. 258, Taf. X, figg. 164--166.

The citation from FABRICIUS is indeed not absolutely certain, for of his *Ar. carnifex* he says: "maxillis [mandibulis] atris"; but in other respects his description suits very well (the cephalothorax e. g. is stated to be "ferrugineus... margine parum flavescens", the abdomen "cinereum linea dorsali, lata, fusca"); and as now both L. KOCH and OHLERT have accepted the specific name *carnifex*, there would seem to be no reason to make hypercritical changes. — The yellow band which, according to BLACKWALL, in his *Clubiona erratica*, goes on both sides from the abdomen's central band obliquely downwards and backwards, does not appear on English specimens of both sexes sent me by Mr CAMBRIDGE under the name of *C. erratica* BLACKW., nor are they to be seen in any specimen in my collection (among which two have been identified by L. KOCH), and which are some from Sweden, others from Germany, Hungary (Fiume) and Italy. The process of the tibial joint is also stated to be "pointed" in *Club. erratica* BLACKW.; but in all specimens I have seen, it is on the contrary *slightly cloven* at the apex. I therefore have not ventured unreservedly to take up BLACKWALL'S *C. erratica* among the synonyms of this species. — In the Swedish specimens there is often *one* spine at the apex of the thighs of the 4th pair, not merely one on the front side of those of the 1st pair.

On *Club. erratica* C. KOCH, see farther on, *C. erratica* WESTR.

(Pag. 382.) XX. DICTYNA [= *Dictyna* SUND. 1833].

Vid. THOR., On Eur. Spid., p. 122.

(Pag. 383.) 1. *D. arundinacea* [= *Dictyna arundinacea* (LINN.) 1758].

- Syn.*: 1758. *ARANEA ARUNDINACEA* LINN., Syst. Nat., Ed. 10, I, p. 620.
 1775. " *LATENS* FABR., Syst. Entom., p. 432 (*ad partem*).
 1802. " *BENIGNA* WALCK., Faune Par., II, p. 209.
 1805. *THERIDION BENIGNUM* ID., Tabl. d. Aran., p. 77.
 1833. *DICTYNA BENIGNA* SUND., Consp. Arachn., p. 16.

1833. CLUBIONA PARVULA BLACKW., Charact. etc., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 437.
1834. DRASSUS PARVULUS ID., Researches in Zool., p. 337 (sec. ID., Spid. of Gr. Brit.).
1836. DICTYNA BENIGNA C. KOCH, Die Arachn., III, p. 27, Taf. LXXXIII, figg. 184, 185.
1841. ERGATIS BENIGNA BLACKW., The differ. in the numb. of eyes etc., p. 608.
1847. ARGUS BENIGNUS WALCK., H. N. d. Ins. Apt., IV, p. 500.
1856. DICTYNA ARUNDINACEA THOR., Rec. crit. Aran., p. 81.
1861. ERGATIS BENIGNA BLACKW., Spid. of Gr. Brit., I, p. 146, Pl. IX, fig. 93.
1869. DICTYNA ARUNDINACEA MENGE, Preuss. Spinn., III, p. 245, Pl. 47, tab. 143.

On the *Ar. arundinacea* of LINNÆUS, see THOR., Rec. crit., p. 81. Respecting *Ar. latens* FABR., vid. infr., *Dictyna latens* WESTR. — One or other of the two next following species, *D. uncinata* and *D. pusilla*, is probably included in the *Ther. benignum* or *Dict. benigna* of some writers. The male is however easily distinguished from ♂ of these species by the spine on the tibial joint of the palpus being, when viewed from the side, blunt at the apex and *not* so long as the semi-diameter of that joint; the female is distinguished from *D. uncinata* ♀ by its shining cephalothorax, with *five* white stripes on the pars cephalica and by the black spot in the anterior region of the back of the abdomen being more extended longitudinally, at least double as long as it is broad. Moreover this species is not inconsiderably larger than either of the two following.

(Pag. 385.) 2. **D. pusilla** [= *Dictyna pusilla* THOR. 1856].

Syn.: 1856. DICTYNA PUSILLA THOR., Rec. crit. Aran., p. 82.

This species is much smaller than *D. arundinacea*, which it in other respects much resembles, even in the palpi of the male: the spine on the tibial joint is however almost as long as the joint's diameter, and, when seen from the side, pointed. The abdomen is usually of a greenish black colour, with a metallic gloss and an indistinct pattern. The female is to me unknown; perhaps I may be unable to distinguish it from small specimens of *D. arundinacea* ♀. The species is not confined to Sweden: I have specimens also from Germany (Travemünde, Nürnberg).

(Pag. 385.) 3. **D. uncinata** [= *Dictyna uncinata* THOR. 1856].

- Syn.*: 1856. DICTYNA UNCINATA THOR., Rec. crit. Aran., p. 82.
 1862. ERGATIS ARBOREA CAMBR., Descr. of ten new spec. of Brit. Spid.,
in Zoologist 1862, p. 7960.
 1869. DICTYNA UNCINATA MENGE, Preuss. Spinn., III, p. 246, Pl. 47,
 tab. 144.

The male of this species is easily distinguished by his palpi, as the descriptions above referred to, show. The female's cephalothorax is opaque and chagrined, with only *three* white lines on the head: the black spot on the back of the abdomen in front, is short, almost square, at least not double as long as it is broad, sometimes slightly narrower behind than before. — A specimen of *Ergatis arborea* CAMBR. from England has been sent me by Mr CAMBRIDGE.

The web that *D. uncinata* constructs, is very unlike that of the preceding species, and exhibits a remarkable agreement with that of *Amaurobius fenestralis* or *atrox*. On old rough wooden fences one often sees (e. g. here in Upsala and Söderköping) dirty, roundish spots, which on closer examination are found to consist of small closely woven spider's webs full of dust, with a little opening in or near the centre. This opening is the mouth of a very short tube, at the bottom of which the proprietress of the web, *D. uncinata*, lies in wait for her prey. This spider then weaves a net which seems very similar to that, with which *Theridion civicum* Lucas¹⁾ — also a *Dictyna* — disfigures the house-walls of Paris. At the same time that the form of the webs of these two species gives one more ground for referring *Dictyna* to the *Amaurobiine*, that genus offers a striking example of how that different habits of life and a different form of web may be quite compatible with very near relationship between species, and shows that the affinity and systematic arrangement of spiders is first and principally determined by the form of the animal itself, and not by its habits and instincts.

(Pag. 386.) 4. **D. latens** [= *Dictyna latens* (FABR.) 1775].

- Syn.*: 1775. ARANEA LATENS FABR., Syst. Ent., p. 432 (*ad partem*).
1836. DICTYNA „ C. KOCH, Die Arachn., III, p. 29, Taf. LXXXIII,
fig. 186.

1) Deser. et fig. d'une nouv. esp. d'Aran. appartenant au genre Théid.,
in Ann. de la Soc. Ent. de France, 2 Sér., VIII, p. 179, Pl. VI, N:o V.

1841. THERIDION LATENS WALCK., H. N. d. Ins. Apt., II, p. 340.
 1841. ERGATIS „ BLACKW., The differ. in the numb. of eyes etc.,
 p. 608.
 1847. ARGUS „ WALCK., H. N. d. Ins. Apt., IV, p. 501.
 1861. ERGATIS „ BLACKW., Spid. of Gr. Brit., I, p. 149, Pl.
 IX, fig. 95.
 1867. DICTYNA „ OHL., Aran. d. Prov. Preuss., p. 42.

In this species, which is easily recognizable by its colour, the palpi of the male seem to be slenderer, and the clava especially narrower than in *D. arundinacea* ♂. The tibial joint has only a *very small* pointed tooth above. With the type-specimens of WESTRING's description I have been enabled to compare English specimens with which I have been favoured by CAMBRIDGE, as also German, which OHLERT sent me. That FABRICIUS under his *Ar. latens* confounded *D. arundinacea* and *D. latens*, WALCKENAER has loc. cit., II, p. 341, sufficiently proved: but the suspicion he there expresses, that *D. variabilis* C. KOCH (Die Arachn., III, p. 29, Taf. LXXXIII, fig. 187) — of which I have specimens of both sexes from various parts of Germany and northern Italy — is but a variety of *D. viridissima* (WALCK.), is erroneous. Conf. OHLERT's description of the male *D. variabilis* (loc. cit., p. 43), which was unknown to C. KOCH.

(Pag. 387.) * 5. *D. pectita* [= *Dictyna pectita* SUND. 1832].

- Syn.: 1832. THERIDIUM PECTITUM SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.
 f. 1831, p. 124.
 1833. DICTYNA PECTITA ID., Consp. Arachn., p. 16.

A very uncertain species, of which the type-specimens have been lost, and which has never, since it was first described, been again met with.

(Pag. 388.) XXI. CLUBIONA [= *Clubiona* (LATR.) 1804].

Vid. THOR., On Eur. Spid., p. 144.

(Pag. 389.) 1. *C. pallidula* [= *Clubiona pallidula* (CLERCK) 1757].

- Syn.: 1757. ARANEUS PALLIDULUS CLERCK, Sv. Spindl., p. 81, Pl. 2, tab. 7.
 1758. ARANEA HOLOSERICEA LINN., Syst. Nat., Ed. 10, I, p. 622.
 1802. „ EPIMELAS WALCK., Faune Par., II, p. 219.
 1805. CLUBIONA HOLOSERICEA ID., Tabl. d. Aran., p. 42 (*ad partem*).
 1805. „ EPIMELAS ID., ibid., p. 43.

1831. CLUBIONA AMARANTHA HAHN, Die Arachn., I, p. 113, Taf. XXIX, fig. 85.
1832. „ HOLOSERICEA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 142 (*ad part.: forma principalis*).
1839. „ INCOMTA C. KOCH, Die Arachn., VI, p. 18, Taf. CLXXXV, fig. 442.
1843. „ EPIMELAS BLACKW., A Catal. of Spid. etc., in Transact. of the Linn. Soc., XIX, p. 115.
1851. „ AMARANTHA WESTR., Förteckn. etc., p. 49.
1856. „ PALLIDULA THOR., Rec. crit. Aran., p. 38.
1861. „ EPIMELAS BLACKW., Spid. of Gr. Brit., I, p. 124, Pl. VII, fig. 77.
- ?1861. „ FORMOSA ID., *ibid.*, p. 125, Pl. VII, fig. 78.
1866. „ PALLIDULA L. KOCH, Die Arachn.-fam. d. Drassiden, p. 323, Taf. XIII, figg. 208—210.
1867. „ AMARANTHA OHL., Aran. d. Prov. Preuss., p. 99.

That this species, which is met with over the whole of Sweden, and is at least in Upland commoner than any other, with which it could be confounded, is identical with *Ar. pallidulus* CLERCK, *Ar. holosericea* LINN. and the *forma principalis* of *Club. holosericea* SUND., whereas *Ar. holosericea* DE GEER is = *C. holosericea* WESTR. (*C. pleragmitis* L. KOCH, *C. dinognatha* CAMBR.), I have in my Rec. crit. Aran. endeavoured to prove. A far more difficult task, than the disentanglement of the synonyms of these Swedish authors, is to distinguish those which are met with in the works of foreign writers; most of the lists of synonyms for this and the nearly allied species are full of errors, and I have also myself been obliged to abandon opinions I had formerly entertained on some of the synonyms of these spiders.

As regards now first WALCKENAER'S *Clubiona holosericea* and *C. amarantha* — the last of which has been by WESTRING, myself and L. KOCH considered identical with *C. pallidula* — the figures of *C. holosericea* given by WALCKENAER both in Hist. Nat. d. Araignés, N:o 4, 3, and in Faune Franç., Arachn., Pl. 7, fig. 8, so closely resemble in colour, form, and size the paler variety (Var. *a* WESTR.) of *C. pallidula*, that I could not avoid taking it up as (at least) *ad partem* identical with that species; that *C. pallidula* is met with at Paris, is certain, for I myself possess specimens from that locality, with which I have been favoured by SIMON. It is however probable, that *C. holosericea* WALCK. includes also other species, as e. g. that described by L. KOCH under the name of *C. holosericea* (see next

species). — The description of *C. amarantha* in H. N. d. Ins. Apt., I, p. 591, contains nothing that excludes the possibility of that species being the same with *C. pallidula*; but in Faune Franç., Arachn., where the descriptions are far more detailed, WALCKENAER says p. 116, concerning the males of *C. holosericea* and *amarantha*: "Dans la soyeuse [*C. holosericea*] les mandibules du mâle ne diffèrent guère de celles de la femelle, elles sont *seulement un peu moins fortes*; dans l'amaranthe [*C. amarantha*] elles sont *tellement allongées qu'elles égalent la longueur du corselet*: elles sont aussi plus minces et dirigées en avant, et presque comme l'atte formicoïde". Hence it seems to me to follow, that *C. amarantha* WALCK. is *not* the same as *C. pallidula*, although the length stated ("5 lignes" = $11\frac{2}{5}$ millim.) seems most immediately to indicate that as the intended species; I am more inclined to refer it to *C. holosericea* WESTR., which sometimes, though not frequently, attains that size, and the mandibles of which are sometimes more than $\frac{3}{4}$ of the length of the cephalothorax. The species again which BLACKWALL looks upon as WALCKENAER'S *C. amarantha*, is a far smaller spider, described by WESTRING under the name of *C. terrestris*; of which more hereafter. HAHN'S *C. amarantha* on the other hand is certainly identical with *C. pallidula*; perhaps his *C. holosericea*, which is " $5\frac{1}{3}$ line" long (loc. cit., I, p. 112, Taf. XXIX, fig. 84) and has a *black side-border* on its cephalothorax, as well as *C. amarantha* OHLERT, may be the paler variety (Var. *a* WESTR.) of the same species.

C. epimelas WALCK., of which WALCKENAER seems only to have seen one specimen, a ♀, certainly belongs to the darker variety (Var. *b* WESTR.) of *C. pallidula*. Of this variety I have not only females, but also ♂ *ad* — *C. epimelas* BLACKW. is a sure synonym, although BLACKWALL'S description of the male's palpi is not quite correct. Of this species CAMBRIDGE has had the kindness to send me a ♂ *ad*. BLACKWALL'S figures show that his *C. epimelas* refers especially to individuals of the darker variety (Var. *b* WESTR.).

I should have considered BLACKWALL'S figure of *C. formosa* as singularly excellent, if it had been said to represent a ♀ of *C. pallidula* Var. *a*, after oviposition. BLACKWALL has probably not seen the type-specimen of *C. formosa*, but only TEMPLETON'S figure and description of it.

C. incomta C. KOCH probably belongs, as is generally supposed, to this species. *C. incomta* OHL. on the contrary, of which OHLERT has obligingly sent me a ♀ *ad*., and which has the cephalothorax

3 millim. long (about equal to patella + tibia of the 4th pair), the first pair of legs somewhat more than 7, the 4th 9½ millim. long, the metatarsi of the 4th double as long as those of the 1st pair, the eyes of the anterior row at very nearly equal distances, the posterior central eyes farther from each other than from the side eyes, the mandibles at least half as thick again as the thighs, as long as, or a little longer than the metatarsi of the 1st pair, the cephalothorax destitute of a black border, sternum brownish yellow, — is identical with *C. frutetorum* L. Koch (loc. cit., p. 344, Taf. XIV, figg. 224—226). Of *C. frutetorum*, which has not before been recorded as Swedish, I have captured specimens of both sexes at Sättra in Westmanland ¹).

We now possess from the pen of L. Koch a so accurate description of *C. pallidula*, that this spider cannot hereafter easily be mistaken for any other. The dark lateral border of the cephalothorax is absent only in one specimen (from Austria) of the many which I have seen; the sternum is probably always of a much darker colour than the legs. The second pair of legs is in the female perceptibly longer than, in the male as long as, the 1st. In ♂ the posterior central eyes appear to me a little farther removed from each other than from the lateral eyes, in ♀ these distances are equal. The tibial joint of the palpus in ♂ has at its apex a strong process directed forwards and outwards, divided into 3 small lobes, of which the middle one is the longest, somewhat pointed, bent downwards; the anterior is short and truncated at the extremity, the posterior (under) very small, pointed, and difficult to see. The vulva consists of a brown or black area truncated behind, the posterior angles of which are formed by two costæ curved almost to a right angle, which are separated by a depression from the rest of the area, and do not reach each other with their inward directed, at the termination glossy and somewhat dilated extremities; as the depressions

1) The mandibles are in *C. frutetorum* ♂ more slender than the anterior thighs, as long as the metatarsi of the 1st pair; the tibial joint of the palpi has two processes at the extremity, outwards: the upper one is dark, large, lamellar, arched, tapering toward the obtuse, downward-bent extremity; beneath this process, and separated from it by a deep, semi-elliptic incisure, proceeds another forward directed process, which is of a brownish yellow colour, truncated at the extremity, and almost as long and coarse as the upper process. The area of the vulva is brown; it is broadly and rather deeply emarginated behind, with the posterior corners strong, rounded and pointing backward.

and costæ are usually of a paler colour outwards, the dark area generally seems to exhibit an indentation on both sides near the posterior extremity.

(Pag. 393.) 2. *C. holosericea* [= *Clubiona holosericea* (DE GEER) 1778].

Syn.: 1778. ARANEA HOLOSERICEA DE GEER, Mém., VII, p. 266, Pl. 15', figg. 13—16.

?1802. " AMARANTHA WALCK., Faune Par., II, p. 219.

?1805. CLUBIONA " ID., Tabl. d. Aran., p. 43.

1832. " HOLOSERICEA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 142 (*ad part.*: Var. c.)

?1843. " PHRAGMITIS C. KOCH, Die Arachn., X, p. 134, Taf. CCCLX, figg. 846, 847.

1851. " HOLOSERICEA WESTR., Förteckn. etc., p. 49.

1856. " " THOR., Rec. crit. Aran., p. 39.

1862. " DINOGNATHA [DEINOGNATHA] CAMBR., Descr. of ten new Brit. Spid., in Zoologist, XX (1862), p. 7957.

1866. " PHRAGMITIS L. KOCH, Die Arachn.-fam. d. Drassiden, p. 315, Taf. XIII, figg. 202—204.

There are probably few names, under which so many various species of spiders have been confounded, as under the appellation *Aranea* or *Clubiona holosericea*. That it is the species here described by WESTRING, that DE GEER meant by his *Ar. holosericea*, seems to me evident, especially by his saying of the male's mandibles, that they are "*grandes et grosses*", which does not suit *C. pallidula*, the only other species, to which *Ar. holosericea* DE GEER could possibly be referred. As now WESTRING in his "*Förteckning*" (List of Swedish Spiders) had called just this DE GEER's species *C. holosericea*, and I, however erroneously, believed that *C. holosericea* WALCK. was the same spider, I proposed in my Rec. crit. that the name *holosericea* should be preserved to DE GEER's and WESTRING's species, although that specific name had been earlier (in 1758) applied by LINNÆUS to another spider, that namely, which had already in 1757 received of CLERCK the name of *A. pallidula*, and therefore must be called *C. pallidula* (Conf. Rec. crit., p. 37—39, 90, 100). Had any other sure name of the species then existed, I should probably have preferred it to the so often misapplied *C. holosericea*; that *C. phragmitis* C. KOCH could possibly be identical with it, never entered my mind; and I must acknowledge that that synonym still appears to me very uncertain. OHLEBT assigns the *C. phragmitis* of C. KOCH to an entirely

different species: the spiders, which he calls *C. phragmitis* C. KOCH (Aran. d. Prov. Preuss., p. 101) and of which he has sent me specimens, belong in fact *ad partem* to *C. trivialis* C. et L. KOCH, *ad partem* to *C. reclusa* CAMBR. ¹). On the other hand *C. phragmitis* L. KOCH and *C. dinognatha* CAMBR. may be declared certain synonyms of *C. holosericea* WESTR.: I possess original specimens of both, German and English, with which I have been favoured by Messrs KOCH and CAMBRIDGE, and Dr KOCH has also identified Swedish specimens of *C. holosericea* WESTR. in my collection as *C. phragmitis* L. KOCH. On the other side I can with perfect certainty affirm that the following species do *not* belong to *C. holosericea* (DE GEER), WESTR.: 1:o *A. holosericea* LINN., 2:o the *forma principalis* of *C. holosericea* SUND., which both belong to *C. pallidula* (see preceding spec.); 3:o *C. holo-*

1) Descr. of 24 new spec. of spid. etc., in Zool., 1863, p. 8567 (7). — The specimen which OHLERT sent me as the *male* of his *C. phragmitis*, is evidently a *C. reclusa*. The cephalothorax is $2\frac{1}{4}$ millim., the mandibles 1, the 1st pair of legs $5\frac{3}{4}$, the 4th 8 millim.; the metatarsus of the 1st pair $1\frac{1}{4}$, that of the 4th 2 millim. The cephalothorax, which is much narrowed in front, has no black lateral border; the mandibles are slenderer than the thighs of the 1st pair, not so long as half the cephalothorax, somewhat shorter than the metatarsi of the 1st pair. The eyes of the anterior row are at equal distances from each other, the posterior centre eyes farther from each other than from the lateral eyes. The patellar joint of the palpus is little longer than it is broad, the tibial joint still shorter and much broader: its apex, on the outer side, is drawn out into a short, coarse, crescent-formed appendage, the two arms of which are black; the inner arm, which points forward, is at its apex divided into two very small teeth; the outer one is more pointed, and curved downward and inward. Beneath this process appears a long, black, pointed, forward-directed process, also issuing from the apex of the tibial joint, which on its upper side has a strong, upward and somewhat backward directed tooth. The lamina is considerably longer than patellar + tibial joints. The abdomen is of a uniform reddish brown colour.

The specimens which OHLERT has sent me as the *female* of his *C. phragmitis*, belong to a dark variety of *C. trivialis* C. et L. KOCH (on which vid. infr., p. 225, *C. pallens* WESTR.). Its cephalothorax is 2 millim., the mandibles 1, first pair of legs $3\frac{1}{2}$, fourth pair $5\frac{1}{2}$, metatarsi of 1st pair $\frac{3}{4}$, those of 4th pair $1\frac{1}{4}$. The cephalothorax is brownish yellow, without any black edge, the legs, maxillæ, labium and sternum brownish yellow. The mandibles are reddish brown, the abdomen dark brown, covered with yellowish grey hair. The cephalothorax is scarcely longer than patella + tibia of the 4th pair; the legs short, the 4th pair exceeding the 1st in length by more than the metatarsus. The eyes of the front row are at equal distances from each other, the distance between the posterior centre eyes is somewhat greater than between these and the posterior lateral. 1, 1 spines on the under side of the tibiæ of the 3rd, 1, 1, 1 under those of the 4th pair of legs.

sericea BLACKW. ¹⁾, which is identical with *C. grisea* L. KOCH ²⁾, and 4:0 *C. holosericea* L. KOCH ³⁾, which is probably the same as *C. holosericea* C. KOCH ⁴⁾, and for which I propose the name *C. germanica*. As regards *C. holosericea* WALCK., SUND. et HAHN, see the preceding article, on *C. pallidula* WESTR. To what species *C. holosericea* OHL. belongs, I do not know — certainly not to *C. holosericea* WESTR. Concerning *C. amarantha* WALCK., which does *perhaps* belong to this species, see the preceding. To what species we ought to aggregate *C. aloma* WALCK., of which WALCKENAER only says: "Abdomen d'un vert sale. Forme et grandeur de la précédente (*amarantha*) dont elle n'est peut-être qu'une variété" (Faune Par., II, p. 219), it is impossible to say; it is not mentioned in WALCKENAER's subsequent works.

C. holosericea (DE GEER) is usually somewhat smaller than *C. pallidula*; I have however a ♂ of 10 and a ♀ of 12 millim. length, but so large individuals are probably rare. The cephalothorax is without a lateral black border, and the sternum of about the same colour as the legs, much paler than the maxillæ and labium, with a fine dark border. In the female the 2nd pair of legs is not longer than the 1st. The anterior centre eyes are nearer to each other than to the lateral eyes, the posterior centre eyes more remote from each other than from the lateral eyes. The mandibles are unusually thick and strong: in the male they are also very long and stretched forwards, as long as the tibia of the 1st pair, or about three fourths, seldom (as in one English specimen) only half, the length of the cephalothorax. In ♂ the tibial joint of the *short, slender* palpi is somewhat longer than it is broad, and has at its extremity on the outer side, a *short, broad* process, lying close in upon the lamina, and pointing forwards; the extremity of this process is divided by a notch into *two small triangular teeth*, the inferior of which is somewhat (in English and German specimens more evidently than in Swedish) longer than the superior. The clava is small, narrow, shorter than the patellar + tibial joint. The vulva forms a small brown area, bounded behind by the rima genitalis; its back corners have the form of two small projecting protuberances;

1) Spid. of Gr. Brit., I, p. 122, Pl. VII, fig. 75.

2) Die Arachn.-fam. d. Drassiden, p. 319, Taf. XIII, figg. 205—207.

3) Ibid., p. 311, Taf. XII, figg. 199—201.

4) HERR.-SCHEFF., Deutschl. Ins., 139 (Deutschl. Crust., Myr. u. Arachn., 6), 3, 4.

in front of the posterior edge are usually to be seen two small longitudinal, very close, almost parallel costæ, which are especially visible in specimens preserved in spirits. L. KOCH says of the male's palpi in his *C. phragmitis*, that the under tooth of the process of the tibial joint is "*aufwärts gebogen*": this I cannot perceive in my specimens. L. KOCH's fig. 203 (loc. cit.) exhibits that tooth far too long and curved upward; neither does fig. 202 give any correct idea of the appearance of the vulva. — Beneath the tibiæ of the 4th pair are usually only 1, 1 spines; yet I have sometimes, and in one and the same specimen, found 1, 1, 1 and 1, 1 spines.

C. holosericea L. KOCH is smaller than *C. holosericea* (DE GEER); in my specimens (identified by L. KOCH) the cephalothorax is about 3 millimeters long. The mandibles are not so thick and coarse as in this latter, so that the cephalothorax is tolerably narrowed in front, and its sides rounded. The colour is variable, paler or darker, as in *C. pallidula*, *C. frutetorum*, *C. trivialis* etc. The vulva forms a large brown area, the posterior corners of which are rounded off and drawn out into two small processes gently *converging inwards*. In the male, the mandibles are only the same length as the metatarsi, and scarcely half as thick again as the thighs of the first pair; the outer side of the tibial joint of the palpus is produced into a short, very coarse apophysis directed forwards and outwards, which is above continued with a black, broad, rounded-triangular tooth pointing forward; on the outer and under side the apical edge of the apophysis is black, incrassated or bent outwards, and terminates below and inwards in a little forward-directed tooth. The tibia of the 4th pair has 1, 1, 1 spines below. This species, or *C. germanica*, as I have proposed to call it, has hitherto not been met with in Sweden.

C. holosericea BLACKW. or *C. grisea* L. KOCH belongs on the other hand to our Fauna; but it has as yet been found only in the most southerly province of the country, Skåne (by Mr C. ROTH, Conservator of the Zoological Museum at Lund). Specimens from Finland and the Finnish Lappmark, identified as *C. grisea* by Dr KOCH (who also has presented me with specimens from Nürnberg), have been sent me by v. NORDMANN. CAMBRIDGE has kindly sent me specimens of "*C. holosericea* BLACKW." — This species is about as large as *C. germanica*. The male's mandibles are very slender, long and projecting, the patellar joint of the palpus short, something longer than it is broad at the apex, the still shorter tibial joint has at its

apex, on the outer side, a strong, downward-curved, pointed process, bearing on its outer side, below, a little short tooth, and beneath that process another which is long, pointed, directed forwards, lying close along the under side of the bulbus, and armed with a tooth on the upper side. The vulva has the form of a short transverse area, the posterior edge of which, formed by the rima genit-
 talis, is black or brown: immediately before the rima are seen two very small dark costæ diverging forwards (almost forming a V), on each side of which is a little, rounded, black elevation (the posterior corners of the area).

(Pag. 394.) 3. *C. lutescens* [= *Clubiona lutescens* WESTR. 1851].

- Syn.: 1851. CLUBIONA LUTESCENS WESTR., Förteckn. etc., p. 49.
 1862. " ASSIMILATA CAMBR., Descr. of ten new Brit. Spid., in
 Zoologist, XX, (1862), p. 7953.
 1866. " LUTESCENS L. KOCH, Die Arachn.-fam. d. Drassiden, p.
 336, Taf. XIII, figg. 217—219.

German specimens of this species from Travemünde and Nürnberg, determined by Dr KOCH as his *C. lutescens*, completely agree with specimens from Skåne, and with WESTRING's type-specimen, which he has lent me. With *C. lutescens*, *C. assimilata* CAMBR., of which CAMBRIDGE gave me a ♂ *ad.*, is without a doubt identical. In the male the mandibles are somewhat longer than half the cephalothorax and than the metatarsus of the 1st pair, and something shorter than the tibia of the same pair; the tibial joint of the palpus is shorter than it is broad at its apex, slender at the base, dilated towards the apex, almost triangular when seen from above; its outer side is drawn out into a strong, dark, slightly sinuated, forward and outward pointing process, as long as the joint itself; it tapers a little towards the somewhat blunt apex, which is slightly curved downwards; beneath this process, and separated from it by a deep rounded indentation, projects another process, *shorter* than the upper one, straight, blunt at the extremity and directed forward; seen in a certain position its extremity is obliquely truncated. The lamina, which is at least as long as patellar + tibial joints, is broader towards the apex; in front of the apex of the bulbus is seen a coarse, circularly curved spine. In the English specimen the process of the tibial joint appears to me somewhat shorter and blunter than in the German and Swedish; in other respects I see no diffe-

rence. The vulva is formed by a tolerably large, rounded, brownish area, which immediately in front of the rima genitalis exhibits two small black spots, and moreover, in front of these, two larger dark spots, which however are not so sharply limited and less distinct.

(Pag. 395.) 4. *C. terrestris* [= *Clubiona terrestris* WESTR. 1851].

- Syn.*: 1851. CLUBIONA TERRESTRIS WESTR., Förteckn. etc., p. 49.
 1851. „ AMARANTHA BLACKW., A Catal. of Brit. Spid. etc., in
 Ann. and Mag. of Nat. Hist., 2 Ser., VIII, p. 42.
 1861. „ „ ID., Spid. of Gr. Brit., I, p. 123, Pl. VII,
 fig. 76.
 1866. „ TERRESTRIS L. KOCH, Die Arachn.-fam. d. Drassiden,
 p. 328, Taf. XIII, figg. 211, 212.

The palpi of the ♂ of this species much resemble those of *C. lutescens*, but the large process of the tibial joint is more pointed, and it is from the under side of the base of that process, and not from the apex of the tibial joint itself, that the second process goes out, which here has the form of a *sharp tooth curved and directed forward*.—Through the kindness of Mr CAMBRIDGE I am in possession of a "*C. amarantha* BLACKW." That this species with its small dimensions and short mandibles cannot be identical with *C. amarantha* WALCK., which is stated to be 5 Paris lines long, and to have the mandibles "as long as the cephalothorax" (vid. sup., p. 215), appears to me self-evident. — The female is unknown to me.

(Pag. 397.) 5. *C. erratica* [= *Clubiona erratica* C. KOCH 1836].

- Syn.*: †?1832. CLUBIONA HOLOSERICEA SUND., Sv. Spindl. Beskr., in Vet.-Akad.
 Handl. f. 1831, p. 142 (*ad part.*: Var. b).
 1836. „ ERRATICA C. KOCH, in HERR.-SCHLIEFF., Deutschl. Ins., 139,
 (Deutschl. Crust., Myr. u. Arachn., 6), 5, 6.
 1843. „ „ ID., Die Arachn., X, p. 131, Taf. CCCLIX,
 figg. 842, 843.
 1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p.
 296, Taf. XII, figg. 188—190.

Although the name *Clubiona erratica* was long previously given by WALCKENAER to quite a different spider, *Chiracanthium carnifex* (FABR.) C. KOCH (= *Club. erratica* BLACKW.), which C. KOCH, when he first described his *C. erratica*, erroneously supposed to be identical with it, the specific name *erratica* may, it seems to me, be retained

for the species before us: the genus *Chiracanthium* will certainly hereafter be kept perfectly separate from *Clubiona*, so that no collision between the names need be apprehended, even if the name *Chir. erraticum* (WALCK.) should be preferred to *Chir. carnifex* (FABR.). — WESTRING has not observed the long, pointed process armed with two teeth at the upper edge, which springs from the apex of the tibial joint of the males palpi below the processes described by WESTRING; it is indeed often concealed by the lamina's edge.

(Pag 398.) 6. *C. trivialis* [= *Clubiona borealis* N.].

This species, of which WESTRING lent me a couple of (dried) specimens, and of which only the female is known, is *not* the species, which, according to L. KOCH, ought to be called *C. trivialis* C. KOCH, but appears to be most nearly related to *C. frutetorum* L. KOCH and *C. alpica* M. (Die Arachn.-fam. d. Drassiden, p. 344 and 347). From the former it seems chiefly to differ by its darker colour and by the black lateral border to the cephalothorax, from the latter by the metatarsi of the 4th pair being *nearly double as long* as those of the 1st, from both by the appearance of the vulva. The vulva in WESTRING's spider consists of a black area, the posterior edge of which, formed by the rima genitalis, is divided by two small incisions or furrows into three lobes, of which *that in the middle is narrowest*, not broad and rounded at the extremity. The cephalothorax is nearly 3 millim., the mandibles 1 $\frac{1}{4}$, the 1st pair of legs 7, the 4th 9 $\frac{1}{2}$ millim.; the metatarsi of the 1st pair are 1 $\frac{1}{3}$ millim., those of the 4th 2 $\frac{1}{2}$, tibia + patella of the same pair 3 millim.; the eyes of the anterior row are at equal distances from each other, the posterior centre eyes rather farther from each other than from the lateral eyes; the tibiae of the 3rd pair have 1, 1, those of the 4th pair 1, 1, 1 spines (the last, at the extremity, inward, is curved) on the under side. These notices are made from WESTRING's original specimens. For the present I look upon this spider as a separate species and call it *C. borealis*. Two other specimens, which appear to belong to *C. borealis*, have been given me by AL. V. NORDMANN, the one from Finland, the other from Kittilä in the Finnish Lappmark.

With respect to the real *C. trivialis* C. et L. KOCH, vid. infra p. 225, *C. pallens* WESTR.

(Pag. 400.) 7. *C. fuscula* [= *Clubiona brevipes* (BLACKW.) 1841].

Syn.: 1841. CLUBIONA BREVIPES BLACKW., The differ. in the numb. of eyes etc., p. 603.

1851. „ FUSCULA WESTR., Förteckn. etc., p. 49.

1861. „ BREVIPES BLACKW., Spid. of Gr. Brit., I, p. 127, Pl. VII, fig. 80.

1866. „ FUSCULA L. KOCH, Die Arachn.-fam. d. Drassiden, p. 349, Taf. XIV, fig. 228.

Of "*C. brevipes* BLACKW.", CAMBRIDGE has kindly favoured me with a ♂ *ad.* — The obtuse spine near the apex, outwards, of the bulbus genitalis in ♂, is somewhat curved forwards and outwards, not quite straight, as WESTRING says. The spine-armature on the legs is in this species very variable. The 4 fore-tibiæ have on the under side sometimes 4, sometimes 3, sometimes only 2 spines; in the ♂ the tibiæ of the 3rd pair have on the underside 1, 1 spines in the three full-grown specimens I have seen. In the ♀, the same tibiæ have usually there only 1, but occasionally, like the ♂, 1, 1 spines. The length of the cephalothorax varies in both sexes from 2 to 3 millim. — *C. paradoxa* L. KOCH (loc. cit., p. 342, Taf. XIV, figg. 222, 223) must be very nearly allied to, if not identical with, *C. brevipes*¹⁾.

A species as remarkable as *C. brevipes* by the form of the process on the tibial joint of the male's palpi, and which is probably to be met with in many places in this country, though it is not described by WESTRING, is *C. cærulescens* L. KOCH (loc. cit., p. 331, Taf. XIII, figg. 213—215). The tibial joint of the male's palpus is in this spider, on the outer side, produced into a process larger than the joint itself, and which dilates into a large, arched, shining surface, which in front is cloven into three curved points, the innermost of which is longest and rapidly curved outwards. The lamina is very narrow at the base, its inner side longer than the outer. Also the vulva in *C. cærulescens* has a most characteristic appearance: the anterior edge of the rima genitalis is produced backwards over the sexual aperture into a broad arched surface, which is somewhat constricted on both sides of the broad emarginated apex, the corners of which form two shining, backward projecting, somewhat inwards-curved protuberances or short

1) Dr KOCH, to whom I had lately sent a *C. brevipes* ♂, still thinks *C. paradoxa* is a different species: he writes me that *C. paradoxa* ♂ has two small strongly curved hooks at the extremity of the bulbus, and that the species is "weit graciler gebaut als *C. brevipes*".

costæ. L. KOCH's description of the vulva is far better than his figure of that organ. Of *C. cœrulescens* I have myself found specimens of both sexes at Stockholm (it was a ♀ of this species, that in my Rec. crit., p. 110, was entered under the name of *C. lutescens*); in Småland it has been found by Dr v. PORATH, in Skåne by Mr EISEN.

(Pag. 401.) 8. *C. corticalis* [= *Clubiona corticalis* WALCK. 1802].

- Syn.: 1802. ARANEA CORTICALIS WALCK., Faune Par., II, p. 429.
 1805. CLUBIONA „ ID., Tabl. d. Aran., p. 42.
 1861. „ „ BLACKW., Spid. of Gr. Brit., I, p. 126, Pl. VII, fig. 79.
 1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p. 301, Taf. XII, fig. 192.

BLACKWALL, evidently by a lapsus calami, places (loc. cit.) under this species *C. domestica* WID. and *Philoiva notata* C. KOCH (which WALCKENAER also had erroneously referred to it); he however afterwards (p. 132) quite correctly takes them up as synonyms under his *C. domestica* (*Iiocranum domesticum* (REUSS), L. KOCH).

It is only in ♀ of this species that the posterior eyes are at nearly equal distances from each other; in ♂ the distance between the posterior centre eyes is evidently greater than the distance between these and the posterior lateral eyes.

(Pag. 403.) 9. *C. compta* [= *Clubiona compta* (C. KOCH) 1839].

- Syn.: 1839. CLUBIONA COMPTA [COMTA] C. KOCH, Die Arachn., VI, p. 16, Taf. CLXXXV, fig. 440.
 1841. „ FUCATA BLACKW., The differ. in the numb. of eyes etc., p. 605.
 1841. „ COMPTA WALCK., H. N. d. Ins. Apt., II, p. 478.
 1843. „ COMTA C. KOCH, Die Arachn., X, p. 129, Taf. CCCLVIII, fig. 841.
 1861. „ „ BLACKW., Spid. of Gr. Brit., I, p. 128, Pl. VII, fig. 81.
 1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p. 294.

Compta is doubtless more accurate orthography than *comta*, and I therefore follow WALCKENAER in adopting it.

(Pag. 404.) 10. *C. pallens* [= *Clubiona trivialis* C. KOCH 1841].

- Syn.: ?1841. CLUBIONA TRIVIALIS C. KOCH, Die Arachn., X, p. 132, Taf. CCCLIX, figg. 844, 845.
 1851. „ PALLENS WESTR., Förteckn. etc., p. 61.

1862. CLUBIONA TRIVIALIS CAMBR., List of a new and rare Spid., in Zoologist, XX, (1862), p. 7947 ¹⁾.
 1866. „ „ L. KOCH, Die Arachn.-fam. d. Drassiden, p. 305, Taf. XII, figg. 194–196.
 1867. „ PALLENS OHL., Aran. d. Prov. Preuss., p. 100.
 1867. „ PHRAGMITIS ID., ibid., p. 101 (*ad partem*).

The spider here described by WESTRING is, according to his type-specimens, which he kindly sent to me, identical with that which L. KOCH describes under the name of *C. trivialis* C. KOCH, and of which I possess specimens identified by Dr KOCH himself. This species is also by CAMBRIDGE considered as the real *C. trivialis* C. KOCH, and it would therefore seem best to preserve to it that name, in preference to *C. pallens*, which has been assigned by L. KOCH to quite another spider. Of *C. pallens* OHL., Dr OHLERT has furnished me with specimens of both sexes; darker specimens of the same species he has sent me under the name of *C. phragmitis*. (Vid. sup., p. 218).

Concerning *C. trivialis* WESTR. or *C. borealis* N., see above p. 223. — In *C. trivialis* C. et L. KOCH the tibial joint of the male's palpus has at its extremity, on the outer side, a single, somewhat short and broad process, tapering towards the apex, which is rounded off and has a slight depression above. This process is of a black or brown colour, except in young specimens (as e. g. WESTRING's) which have lately changed their skin. The vulva forms a brown or black area, the posterior edge of which, formed by the rima genitalis, is somewhat produced and sinuated (its middlemost portion being larger and more projecting than the lateral); in front of the edge are seen two depressions, and at the very apex of it generally also a small pointlike fovea.

As regards *C. pallens* HAHN (Die Arachn., II, p. 10, Taf. 40, fig. 101), it is utterly impossible with any certainty to identify it; nor is it much easier to recognize the spider, which C. KOCH (loc. cit., VI, p. 19, Taf. CLXXXV, figg. 443, 444) took to be *C. pallens* HAHN, and to which he preserved that specific name. The species, which L. KOCH (loc. cit.) calls *C. pallens* HAHN, and which may keep the name, is according to specimens with which he has furnished me, identical with *C. diversa* CAMBR. ²⁾, of which I possess an English ♂ *ad.* through the kindness of Mr CAMBRIDGE. The species, as this eminent arachnologist observes, much resembles *C. trivialis*

1) According to specimens, with which I have been provided by Mr CAMBRIDGE.

2) Descr. of ten new Brit. Spid., in Zoologist, XX (1862), p. 7959.

L. KOCH, but may readily be distinguished by its smaller size (the cephalothorax is but $1\frac{1}{2}$ millim. long) and the different form of the tibial joint's process in the male. "This projection in *C. trivialis* is spatular-shaped and concave inside, while in *C. diversa* it is pointed" (CAMBR., loc. cit.). — The tibiae of the 3rd pair have *one* spine in the midst of the under side; but beside that there is, at least sometimes, a finer spine nearer the base. The area of the vulva is dark at the sides, with the posterior edge produced into an obtuse angle.

Under the name of *C. pallens* BLACKW. (see Spid. of Gr. Brit., I, p. 130, Pl. VIII, fig. 82) I have received from CAMBRIDGE a ♂ and ♀ of another, still smaller species. Its cephalothorax is but 1 millim. long, yellowish brown with a very fine black border, the abdomen without any design, darker above, brownish, on the sides and underneath yellowish or reddish. The mandibles are blackish or rusty brown, the maxillae and labium dark, the sternum and legs pale yellowish. The posterior centre eyes are more remote from each other than from the lateral eyes. The male's palpus-clava is blackish brown, the very short tibial joint is at its apex drawn out into a *very short, lamellar process rounded at the extremity*, and lying close along the lamina. (In *C. pallens* [HAHN] L. KOCH the process is *tolerably long, pointed*, and directed outwards and forwards). The tibiae of both pairs of fore legs have on the under side 2, 2 spines, their metatarsi 2. On the under side of the tibiae of the 3rd pair I can see on my specimens only *one* spine. For this species I propose the name *C. minutula*. — BLACKWALL'S description of the process on the tibial joint of his *C. pallens* seems however to indicate, that he had the real *C. pallens* (*C. diversa* CAMBR.), and not *C. minutula* before him.

C. pallens HENTZ (Descr. and fig. of the Aran. of the Un. States, in Bost. Journ. of Nat. Hist., V, p. 449, Pl. XXIII, fig. 13) is a fourth species with this name. It is cited by L. KOCH under *C. excepta* L. KOCH (loc. cit., p. 300, Taf. XII, fig. 191).

(Pag. 406.) XXII. SPARASSUS [= *Micrommata* (LATR.) 1804].

Vid. THOR., On Eur. Spid., p. 175.

(Pag. 406.) 1. *S. virescens* [= *Micrommata virescens* (CLERCK) 1757].

Syn.: 1757. ARANEUS VIRESCENS CLERCK, Sv. Spindl., p. 138, Pl. 6, tab. 4 (= ♀).

1757. „ ROSEUS ID., ibid., p. 137, Pl. 6, tab. 7 (= ♂).

1778. ARANEA VIRIDISSIMA DE GEER, Mém., VII, p. 252, Pl. 18, figg. 6—16.
 ?1781. „ VIRESCENS SCHRANCK, Enum. Ins. Austr., p. 533.
 1789. „ ROSEA OLIV., Encycl. Méth., IV, p. 226.
 1793. „ SMARAGDULA FABR., Ent. Syst., II, p. 412.
 1805. SPARASSUS SMARAGDULUS WALCK., Tabl. d. Aran., p. 39.
 1805. „ ROSEUS ID., ibid., p. 40.
 1806. MICROMMATA SMARAGDINA LATR., Gen. Crust. et Ins., I, p. 115.
 1831. „ „ HAHN, Die Arachn., I, p. 119, Taf. XXXIII, fig. 89.
 1832. SPARASSUS SMARAGDINUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1831, p. 147.
 1837. „ VIRESCENS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 28.
 1845. „ „ ID., Die Arachn., XII, p. 87, Taf. CCCCXVI, fig. 1019.
 1861. „ SMARAGDULUS BLACKW., Spid. of Gr. Brit., I, p. 102, Pl. V, fig. 61.
 1870. MICROMMATA VIRESCENS THOR., On Eur. Spid., p. 176.

Ar. virescens LINN. (Syst. Nat., Ed. 10, I, p. 623), which SCHRANCK refers to this species, does not belong to it, but to *Dolomedes fimbriatus* (CLERCK). — What spider is intended by *Ar. virescens* FABR. (Ent. Syst., II, p. 408) "viridis abdomine cylindrico nigro, pedibus anticis longissimis", I do not know. — That the *Spar. ligurinus* of C. KOCH (Die Arachn., XII, p. 89, Taf. CCCCXVI, fig. 1020) is a variety of *Micr. virescens*, as that author himself suspects, seems to me but little probable. The vulva is in *M. ligurina* truncated behind, whereas in *M. virescens* its posterior edge forms an obtuse angle; in a ♂-specimen from Dalmatia, which I think belongs to *M. ligurina* (though its tarsi and metatarsi are not reddish), the process of the tibial joint of the palpi is at the extreme apex *truncated and slightly notched*, not, as in *M. virescens* ♂, conically pointed.

(Pag. 408.) 2. *S. ornatus* [= *Micrommata ornata* (WALCK.) 1802].

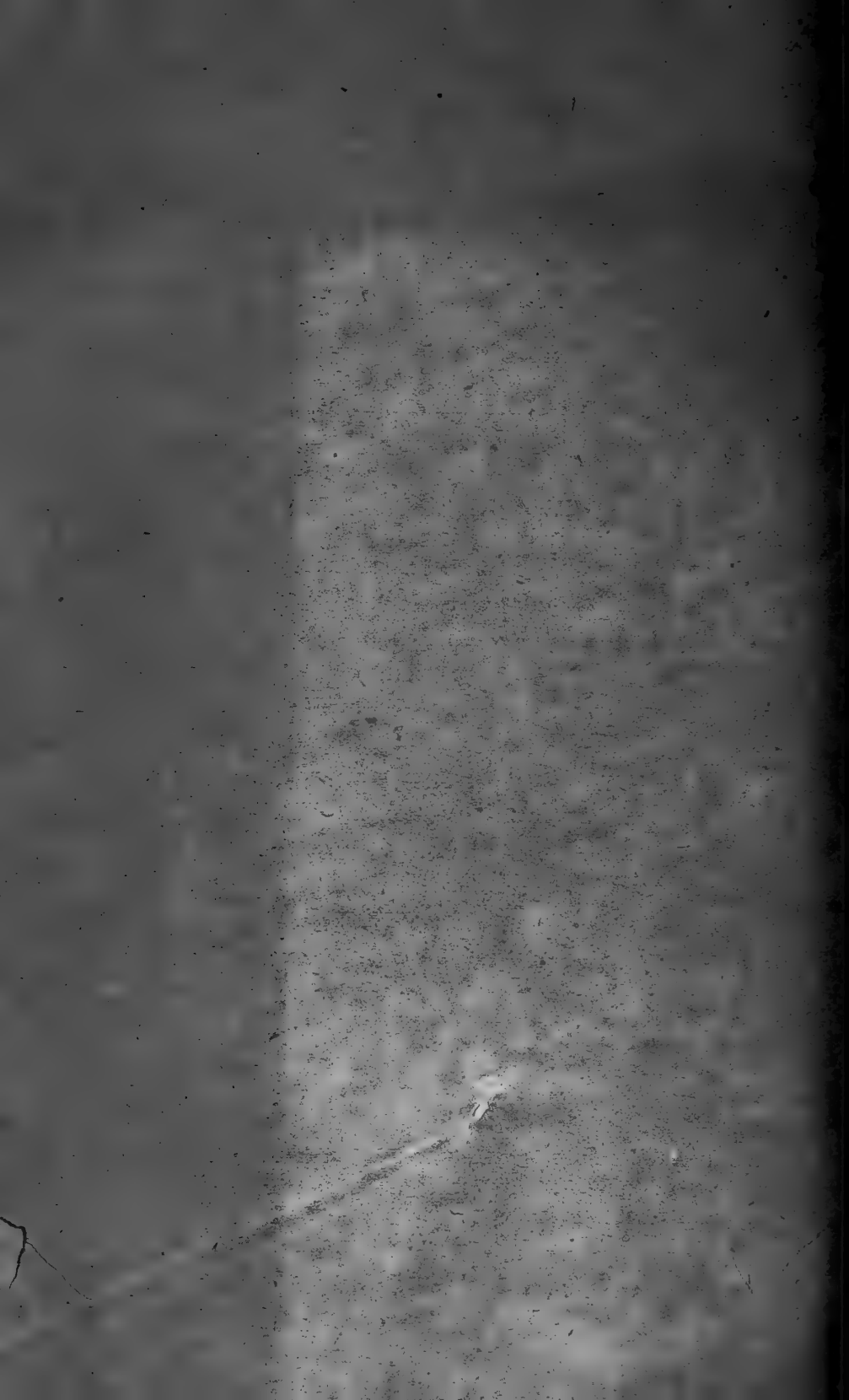
- Syn.: 1802. ARANEA ORNATA WALCK., Faune Par., II, p. 226.
 1805. SPARASSUS ORNATUS ID., Tabl. d. Aran., p. 40.
 1845. „ „ C. KOCH, Die Arachn., XII, p. 90, Taf. CCCCXVII, fig. 1021.

According to WESTRING, in this species the male's palpi are precisely similar to those of *M. virescens*, which might justify a doubt as to whether *M. ornata* be really a distinct species. I have myself seen only imperfectly developed specimens of *M. ornata*, and cannot therefore venture to pronounce an opinion.

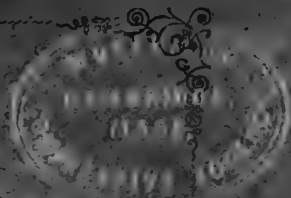
No 2 (pp. 97—228) published May 17th 1871.

ERRATA:

Pag. 98, line 12, for *salt. ad part.* read *ad part.*
" 93, " 8, " be smaller have shorter palpi



Prof. L. Agassiz
With the authors comp.



REMARKS
ON SYNONYMS
OF EUROPEAN
SPIDERS,

BY
T. THORELL.

N:o 3.

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(Pag. 410). FAM. IV. THOMISIDÆ [= **Laterigradæ** NOB.  
*ad max. part.*]

Vid. THOR., On Eur. Spid., p. 169 et seq.

(Pag. 410). I. THOMISUS [= **Xysticus** (C. KOCH) 1835 + **Coriarachne** THOR. 1870 + **Dicaea** THOR. 1870 + **Misumena** (LATR.) 1804].

On these genera see THOR., On Eur. Spid., p. 183—186.

Some species belonging to the genus *Xysticus* C. KOCH, namely *X. cristatus* (CLERCK), *X. bifasciatus* C. KOCH, *X. ulmi* (HAHN) etc., which greatly resemble each other in form and colour, constitute a group, the synonyms of which present considerable difficulties. In the older writers, including WALCKENAER, the specific names *cristatus*, *viaticus* etc. are without doubt *collective denominations* for several different species. On the other hand HAHN and C. KOCH have described as specifically different several of these forms, which however are often difficult to recognize with certainty, because these authors almost exclusively gave their attention to differences of *colour*, and neglected to study the organs of copulation, which probably alone can offer sure and evident marks of distinction in these spiders. The difficulty is considerably increased by the circumstance, that the two *sexes* are very dissimilar, so that there is great risk of error in determining which forms belong to each other as male and female of the same species. As the *males* are comparatively easy to distinguish, it seems most reasonable in the identification of species in the first place to pay attention to them, especially as already BLACKWALL, WESTRING, OHLERT and others have observed and duly pointed out as particularly good marks of distinction the considerable differences of form, which the males' palpi present in most of these spiders. The females' vulvæ indeed also exhibit peculiarities of form, but these differences are not very conspicuous, and are moreover difficult to figure and describe, so that the characteristic features of that organ have been hitherto but little considered. The *claws* do not appear to me to offer any reliable assistance in the determination of the species; they differ greatly in form in the different sexes (See THOR., On Eur. Spid., p. 185), and the number of teeth with

which they are armed, varies not inconsiderably within the same species. The number of *spines* on the legs sometimes offers good distinguishing marks; but the most important and certain are, as has been said, those that are drawn from the form and armature of the organs of copulation.

In the ♂ of the species in question the *pars tibialis* of the palpus has, on the underside, a very short, compressed or longitudinally grooved process, usually truncated at its termination; the outer side of the joint is drawn out into a longer or shorter, more or less pointed, coarse spine, lying close to the external edge of the lamina bulbi or *pars tarsalis*. This lamina has usually, on its outer border, a blunt, more or less soft or transparent process. The bulbus itself in general exhibits a very long, fine spine or coarse bristle, curved round the bulbus on the sides and in front, and closely adjoining the margin of the cavity, in which the bulbus is included; the point of this long spine is sometimes curved upward and either enclosed in or lying along the transparent process on the outer border of the lamina (particularly clearly in *X. cristatus*). On the under side of the bulbus may generally be found one or two spines or processes, the different position, form, and number of which offer particularly good marks of distinction. — The female's vulva usually consists of one or two foveæ, and also exhibits constant but less easily observable differences in the various species.

The species of the genus *Xysticus* described by WESTRING, and to which we here chiefly refer, are his *Thomisus lanio*, *bifasciatus*, *cristatus*, *calcaratus*, *audax*, *cinereus*, *ulmi* and *sabulosus*. The other are comparatively easy to distinguish; and for them also the organs of copulation present excellent characteristics.

(Pag. 412). 1. **Th. lanio** [= *Xysticus impavidus* N. <sup>1</sup>)].

Syn.: ?1845. *XYSTICUS LANIO* C. KOCH, Die Arachn., XII, p. 77 (*ad part.*: Tab. CCCXIV, fig. 1010.

1851. *THOMISUS* „ WESTR., Förteckn. etc., p. 50.

1865. *XYSTICUS* „ OHL., Arachnol. Studien, p. 7 (*ad part.*).

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1) *Xysticus impavidus* N. — *Mas.* Cephalothorax c:a 3 <sup>1</sup>/<sub>4</sub> millim. longus, dorso leviter arcuato, fronte paullo rotundata, non exacte truncata; ferrugineo-fuscus, vitta media lata fusco-testacea, macula ordinaria fusciori partis cephalicæ in lateribus rotundata, postice breviter acuminata; postice utrinque macula nigra notatus. Palpi testaceo-fusci, lamina obscuriore, bulbo nigro; *pars tibialis* parte patellari dimidio brevior, procursu laterali longitudinem ipsius partis æquanti, recto,

The species here described by WESTRING is different from that which is entitled to the Kochian specific name *lanio*, at least if the form described and figured by KOCH as the *chief form* of the *male* is to be considered as the type of the species. *Th. lanio* WESTR. was however probably known to KOCH and by him confounded with "*X. lanio*:" Fig. 1010 in Die Arachn., which represents the *female*, appears in fact to me more like WESTRING's species than the right *X. lanio* C. KOCH. The right *X. lanio* we take to be the spider, the male of which C. KOCH has figured fig. 1009; the "variety" of ♂ represented in fig. 1011 seems to me on the contrary to be a male *X. bifasciatus*. As regards fig. 1012, which KOCH considers as also a variety of *X. lanio*, vid. infr. under *Thom. calcaratus* WESTR.

*X. lanio* C. KOCH, which is identical with *X. viaticus* OHL. *ad part.* (Die Aran. d. Prov. Preuss., p. 113), according to specimens communicated by OHLERT, and certainly also with *Thom. lateralis* HAHN — of which more hereafter —, and which I have received from L. KOCH under the name of *X. lanio*, is but slightly larger than *X. cristatus*. The female greatly resembles that species, but the male is easily distinguished both by its colour and by the different form of the palpi. The bulbus has nearer the base two processes, the first of which forms a *fine, pointed, almost appressed* spine, slightly curved and directed forwards (which spine may easily be overlooked); the other is *longer and stronger*, has also the form of

forti, parum acuminato, ad  $\frac{1}{4}$  longitudinis laminæ circiter pertinenti; procursu inferiore in latere exteriore a basi ad apicem excavato, postice et in angulo posteriore rotundato, apice antice emarginato, angulo anteriore producto et late truncato: margine antico igitur concavato. Lamina bulbi tuberculum conicum, in margine mox ante apicem procursus lateralis partis tibialis situm, ostendit. Bulbus subtus ad basin spinis duabus fortibus, æque fere longis armatus, quarum posterior fere recta est, apice paullo tantum introrsum curvata, versus apicem compressum sub-dilatata, altera apice acuminata, ad basin lateris anterioris et interioris dente forti armata, introrsum et retro, versus spinam priorem, curvata; spinæ igitur digitis cheles cancris sub-similes. Pedes 1:mi paris c:a 11 millim. longi, 2:di paris iis vix visibiliter breviores; femora et patellæ 4 anteriora nigro-fusca, reliqua internodia fusco-testacea, tibiæ metatarsique 4 posteriores apice fusci, et fusco-sub-maculati; aculei subtus in tibiis anterioribus 8—10 esse videntur, in duas series ordinati. Abdomen nigro-fuscum, dorso limbo angustiore albicanti circumdato, vitta media ordinaria parum expressa, plerumque maculis 3 angustis transversis utrinque maculaque antica et postica, his formâ minus definitâ, repræsentata.

*Syn.*: 1861. THOMISUS LANIO WESTR., Aran. Suec., p. 412.

1867. XYSTICUS „ OHL., Aran. d. Prov. Preuss., p. 115 (*ad part.*)  
Cet. *Syn. vid. sup.*

a forward-directed, somewhat appressed spine, the extremity of which is pretty abruptly bent inwards and somewhat backwards (towards the former spine). The lamina has on its outer edge a dark, knob-like process. The inferior process of the pars tibialis is broad, dilated towards the end, and curved somewhat forward; its anterior corner forms an acute, the posterior an obtuse angle: the obliquely truncated extremity is slightly emarginated. The cephalothorax is more convex, arched longitudinally. Its general colour is brownish or rusty *red*, not dark brown, as in ♂ of *X. cristatus*. The palpi, even the lamina, are of a pale colour, brownish or greyish yellow. The 4 anterior femora are usually but little darker than the following joints, but sometimes dark brown, as in C. KOCH's figure. The upper side of the abdomen is of a fine reddish, sometimes blackish, brown: the greyish white dorsal band is narrow, but usually very clear, with its lateral teeth long, narrow, and extending almost to the greyish white limbus surrounding the upper side of the abdomen. The female, which strongly resembles *X. cristatus* ♀, but is covered with stronger and thicker bristles, especially on the abdomen, is distinguished by the vulva being composed of *two tolerably large, obliquely placed, oval, low tubercles converging backwards*, ordinarily of a brown or blackish colour, and each bordered internally by a depressed curved line, so that the interval is almost )(-formed. The abdomen's pale, indented dorsal band is something narrower than in *X. cristatus* ♀, its teeth longer and sharper, extended transversely; the first pair of these teeth are usually broader, and form two isosceles triangles, projecting at right angles from the band, the three remaining pairs are narrower, directed outwards and somewhat backwards; *the anterior portion of the sides of the abdomen is often rosy red*, and the same colour may sometimes be seen on the sternum. So also in *Thom. lateralis* HAHN, according to HAHN's description and figures<sup>1)</sup>; and as I am fully convinced that *Th. lateralis* HAHN is identical with the spider of which we are now speaking, I propose to call it *Xysticus lateralis* (HAHN) 1831. The figure given by HAHN in Monogr. Aran. is better than that in Die Arachn.

*X. lateralis* (HAHN) NOB., or *X. lanio* C. et L. KOCH, is met with also in Scandinavia: I have one male specimen, which I many years ago captured at Göteborg, and another which I took at Stockholm; the species has also been found in Skåne and Blekinge by Mr EISEN, and in Småland by Dr. v. PORATH.

1) Die Arachn., I, p. 40, Tab. X, fig. 31; Monogr. Aran., 6, Tab. 2, fig. B.

I have received from the late Dr. OHLERT under the name of *X. lanio* an entirely different male spider: a similar ♂ has also been found by Mr EISEN in Skåne, and it appears to me probable, that this is just the male to the female called by WESTRING *Thomisus lanio*. I call this spider *X. impavidus* (see above, p. 230, the foot-note). It is easily distinguished from *X. lateralis*, or *X. lanio* C. et L. KOCH, not only by its colour, its dark palpus-lamina and its more considerable size, but especially by the form of the processes on the under side of the bulbus, which are *both* strong and of nearly equal length, the interior directed almost accurately downwards, but somewhat inwards and forwards, compressed and somewhat dilated towards the *slightly* inwards curved extremity; the other process, which has at its base a strong tooth pointing forwards, is sharp and directed at first downwards, but afterwards curved backwards and inwards, towards the firstnamed process. In size and colour *X. impavidus* ♂ bears a close resemblance to *X. bifasciatus* ♂, from which it may however without the least difficulty be distinguished by the palpi (see *Thom. bifasciatus* WESTR. further on). OHLERT has, as I perceive by the specimens he has sent me, confounded this *X. impavidus* with *X. viaticus* C. KOCH or *X. Kochii* THOR. (concerning which more under *Thom. cristatus* WESTR.), in which the processes of the bulbus are very similar to those of *X. impavidus*; but they are in *X. Kochii* directed inwards and somewhat forwards, and the posterior process is *strongly and rapidly* curved, so that it externally forms an *angle* or corner, and has almost the form of a *boot*. — Another species that appears to be nearly related to *X. impavidus*, is *X. luctator* L. KOCH'), but in this species the two processes on the under side of the bulbus are said to cross each other, and the back one to be "am Ende kurz gespalten," which is not the case in *X. impavidus*.

*Thom. lanio* WESTR., which I conceive to be the female to *X. impavidus*, is, as may be seen from his description, considerably larger and darker-coloured than the female of the true *X. lanio* or *X. lateralis* (HAHN). The length of the tibia and patella together is 5 millim.; in *X. lateralis* ♀ it is not more than about 4 millim. What particularly distinguishes this *X. impavidus* ♀ is, that the forehead is almost *semicircularly rounded off*, not truncated, as in the related species (Conf. WESTR., Aran. Suec, p. 413); the great number of short spines on the under side of the anterior tibiæ and

1) Beitr. z. Kenntn. d. Arachn.-fauna Galiziens, p. 29.

metatarsi is also a good characteristic. The vulva consists of a large, transversal, deep fovea, exhibiting at the bottom two longitudinal ridges; behind and immediately adjoining this fovea there seems to be a shallow depression. Of this ♀ I have but one dried specimen.

(Pag. 414). 2. *Th. bifasciatus* [= *Xysticus bifasciatus* C. KOCH 1837].

*Syn.*: 1837. *XYSTICUS BIFASCIATUS* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 26.

1838.       "               "               ID., Die Arachn., IV, p. 59 (*saltem ad part.*: ♀), Tab. CXXV, figg. 287, 288.

1845.       "               LANIO ID., *ibid.*, XII, p. 77 (*ad part.*, "Var. maris"), Tab. CCCCXIV, fig. 1011.

1861. *THOMISUS BIFASCIATUS* BLACKW., Spid. of Gr. Brit., I, p. 79, Pl. IV, fig. 46.

This species has been remarkably well and completely described by WESTRING both as regards form and colour: we will only add that the vulva is composed of a large, deep, rounded or at least in front more truncated fovea, continued backwards by a narrower and shallower depression (thus nearly resembling a key-hole); a dark spot is usually found on each side of this depression. English specimens of *Thom. bifasciatus* BLACKW., both ♂ and ♀, have been kindly sent to me by CAMBRIDGE; I have also received from L. KOCH a ♂ of this species under the name of "*Xysticus bifasciatus* C. KOCH," so that this name appears to be generally received for the spider here treated of. C. KOCH appears however to have described the male of this species, or at least some variety of it, as a variety of *X. lanio* (see *synom.*).

The bulbus genitalis has in *X. bifasciatus* on its under side, near the base, two strong, long, spine-like processes, which the greater part of their length run parallel with each other, only with their inward curved extremities diverging at an acute angle. These two long spines generally lie so close together, that they seem to form but one process cloven at the extremity, but sometimes they are more or less widely separated. The anterior one has, somewhat above the point where it bends inward, an outward-curved tooth. The cephalothorax is strongly and regularly convex; the forehead abruptly truncated.

The spider described and figured by C. KOCH (*loc. cit.*, fig. 286) as the male of *X. bifasciatus*, I cannot venture to include in this species: it is stated to be far smaller than is the real male *X. bifasciatus*, and the pattern on the abdomen is said to be light yellow,



which is by no means the case in *X. bifasciatus* ♂, though it is so in a nearly allied species, *Thom. erraticus* BLACKW. 1834 <sup>1)</sup>, which in size and colour exactly agrees with KOCH's description of his *X. bifasciatus* ♂. I have met with specimens of *X. erraticus* ♂ in the neighbourhoods of Stockholm and Göteborg, and a ♂ *ad.* has been kindly sent me from England by CAMBRIDGE. By WESTRING the male has been confounded with *X. ulmi* ♂ (on which see farther on). The length of the cephalothorax in *X. erraticus* BLACKW. ♂ is only 2 1/2 millim., the length of the patella + tibia 3 millim. The bulbus of the palpi has on the under side a strong, pointed spine curved and directed inwards and somewhat forwards; outside and somewhat in advance of this appears a much smaller and weaker, more blunt spine, which is directed and slightly curved obliquely inwards. Both these spines are curved in *nearly the same direction*, not towards each other (as may be seen from KOCH's figure, where however these spines are erroneously directed backwards instead of inwards). The lamina bulbi has on its outer edge, just in front of the point of the lateral process of the pars tibialis, a small knoblike process. The said process of the pars tibialis is very short (scarcely reaching 1/4 of the lamina's length) and strong: the process on the under side of that joint is longer than it is broad, somewhat narrower in the middle, slightly curved forward at the apex, so that the posterior angle is almost a right angle, the anterior elongated and acute; the apex itself is truncated, with a small incision near the posterior angle. The female of *X. erraticus* is not with certainty known to me; I suppose however, that a couple of small (dried) females in my cabinet, which I had formerly referred to *X. bifasciatus*, belong to *X. erraticus*; they are in fact not larger than *X. cristatus*, and of a yellowish or pale brownish colour; the legs are without spots, the cephalothorax has two parallel dark bands, and dark edges; the dorsal band of the abdomen is indistinct: the upper side of the abdomen has in front two blackish lines diverging backwards, and two blackish points or small dots in the middle.

(Pag. 417). 3. *Th. bivittatus* [= *Xysticus ulmi* (HAHN) 1831].

As regards this species vid. infr. under *Th. ulmi* WESTR.

<sup>1)</sup> Researches in Zool. p. 408; — Spid. of Gr. Brit., I, p. 71, Pl. IV, fig. 40.

(Pag. 418). 4. **Th. cristatus** [= *Xysticus cristatus* (CLERCK) 1757].

Var.  $\alpha$  (Forma principalis):

- Syn.*: 1757. ARANEUS CRISTATUS CLERCK, Sv. Spindl., Sv. Spindl., p. 136, Pl. 6, tab. 6.  
 1758. ARANEA VIATICA LINN., Syst. Nat., Ed. 10, I, p. 623.  
 1789. „ CRISTATA OLIV., Encycl. Méth., IV, p. 226.  
 ?1805. THOMISUS CRISTATUS WALCK., Tabl. d. Aran., p. 32 (*ad part.*).  
 1833. „ CRISTATUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 217 (*ad part.*).  
 1835. XYSTICUS AUDAX C. KOCH, in HERR-SCHLIEFF., Deutschl. Ins., 129, 16 et 17.  
 1835. „ MORDAX ID., *ibid.*, 130, 19 et 20.  
 1845. „ AUDAX ID., Die Arachn., XII, p. 75, Tab. CCCXIII, figg. 1005—1008.  
 1856. „ CRISTATUS THOR., Rec. crit. Aran., p. 74.  
 1861. THOMISUS „ BLACKW., Spid. of Gr. Brit., I, p. 68, Pl. IV, fig. 38.  
 1866. XYSTICUS AUDAX OHL., Aran. d. Prov. Preuss., p. 114.

Var.  $\beta$ , *pini*:

1831. THOMISUS PINI HAHN, Die Arachn., I, p. 26, Tab. VIII, fig. 23.  
 1837. „ CINEREUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 26.  
 1838. „ „ ID., Die Arachn., IV, p. 63, Tab. CXXVI, fig. 290.  
 1856. XYSTICUS PINI THOR., Rec. crit. Aran., p. 111.  
 1861. THOMISUS CINEREUS WESTR., Aran. Suec., p. 424.  
 1861. „ AUDAX BLACKW., Spid. of Gr. Brit., I, p. 70, Pl. IV, fig. 39.

The species here described by WESTRING, which is commonly met with over the whole Scandinavian peninsula, from Skåne to Lappland and the Finnmark, and to which the specific name *cristatus* ought unconditionally to be reserved (Conf. Rec. crit. Aran., p. 74), has both by WESTRING and myself been considered identical with that, which from C. KOCH has received the name of *Xyst. viaticus*. I have however gradually come to the conclusion, that this is a mistake: in 1858 I met at Travemünde with a to me then unknown male *Xysticus*, to which C. KOCH's description of *X. viaticus* answers at least as well as to our Swedish *X. cristatus*; and I have moreover since received both from OHLERT and from L. KOCH the true *X. cristatus* (CLERCK) under the name of *X. audax* C. KOCH. Among the specimens of "*X. audax*" sent me by L. KOCH, are adult specimens of both our Var.  $\alpha$  and  $\beta$  of *X. cristatus*. L. KOCH has also kindly sent me specimens of "*X. viaticus*," which is really identical

with the species found by me at Travemünde. In Sweden this *X. viaticus* has never yet been observed, and hence it is clear, that the specific name *viaticus*, which was given by LINNÆUS to a Swedish spider, and which without doubt is synonymous with *cristatus* CLERCK, cannot be retained to KOCH's *X. viaticus*, which species I therefore (On Eur. Spid, p. 185) have called *X. Kochii*; and I shall farther on mention some of the characteristics, whereby it may be distinguished from *X. cristatus*.

The other synonyms entered upon my list are not all equally certain. We shall first examine that taken from WESTRING. *Thom. cinereus* WESTR. is a spider very common in Sweden, and to which WESTRING appears to me rightly to refer HAHN's *Thom. pini* (= *Xyst. mordax* C. KOCH, according to KOCH himself), as also *X. cinereus* C. KOCH<sup>1)</sup>. WESTRING was acquainted only with the female of his "*Th. cinereus*", which differs in colour only from *X. cristatus*, the form of the vulva being perfectly alike in "*Thom. cristatus*" and "*Thom. cinereus*". I also possess a suite of varieties of these two forms, which show that they gradually pass into one another. I have an adult male, that had probably changed its skin shortly before it was captured, and which, as regards the colours of the cephalothorax, abdomen and legs, is very unlike the varieties most usually met with of *X. cristatus*, but on the other hand so like WESTRING's *Thom. cinereus* ♀, that I was satisfied as soon as I had obtained it, that it was the male of this Westringian species — and yet its organs of copulation appeared on closer examination to be precisely similar with those of "*Th. cristatus*" ♂. For these reasons I can no longer avoid the conclusion that *Thom. cinereus* WESTR. (as also *X. cinereus* KOCH and *Thom. pini* HAHN, as far as these are identical

1) Dr L. KOCH has obligingly sent me a spider from the vicinity of Nürnberg, which he suspects may be identical with *X. cinereus* C. KOCH; but, as it seems to me to have but little similitude with the figure given by C. KOCH of his *X. cinereus* (Die Arachn. loc. cit.), I believe it is quite a different and new species, which may be called *X. acerbus*. It is, by the form of the genital bulb, more nearly allied to *X. calcaratus*, *X. luctuosus* etc. than to *X. cristatus*, and may be easily recognized by the peculiar form of the processes of the tibial joint in ♂.

*Xysticus acerbus* N. — *Mas.* Cephalothorax fere 3 millim. longus, dorso sub-recto, fronte truncata, non rotundata; ferrugineo-fuscus, macula V-formi postica sub-testacea, antice lineis ejusdem coloris duabus minus distinctis continuata et partem cephalicam ita includenti, hac parte lineis 3 longitudinalibus clarioribus minus distinctis, fasciæque transversa albicanti inter series oculorum notata. Sternum et partes oris ferrugineo-fusca, clarius sub-variata. Palpi ferrugineo-

with this species of WESTRINGS', is only a variety of *X. cristatus*. *Thom. audax* BLACKW. belongs, as I perceive from specimens of both

fusci, bulbo piceo; pars patellaris paullo longior quam latior; pars tibialis eâ brevior, versus apicem dilatata, desuper visa fere triangula, brevior fere quam latior ad apicem, apice lateris exterioris in procursum anteriora versus et paullo foras directum, longitudine fere ipsius partis, producto; nec procursum versus apicem abruptius compresso, apice acuminato paullulo deorsum curvato: vix ad  $\frac{1}{3}$  longitudinis laminæ pertinenti. Latus exterioris partis tibialis infra in alterum procursum excurrit latum, extus convexum, intus ad longitudinem concavum, versus apicem paullo angustatum, apice emarginato, anteriora versus, foras et deorsum directum, basi cum procursum apicali partis tibialis ita concretum, ut emarginatione parva tantum ab eo separetur. Laminæ margo exterior æqualiter rotundatus, tuberculo vel procursum nullo. Bulbus rotundatus, humilis, subtus parum inæqualis, sub-cochleiformis, in margine exteriori tuberculo vel dente parvo nitido, pone apicem procursum apicalis partis tibialis sito, munitus; antice in setam vel spinam tenuem excurrentem extus directam, circa apicem ejus sub-curvatam et laminæ arcte appressam, præterea inermis. Pedes ferrugineo-fusci, minus distincte clarius variati, metatarsis tarsisque fuscior testaceis et in pedibus saltem anterioribus apice infuscatis; 1:mi paris pedes c:a  $11\frac{1}{2}$  millim. longi, 2:di paris iis paullo breviores. Tibiæ anteriores subtus paribus 4 aculeorum sat brevium, diametrum tibiæ longitudine non superantium, armatæ; metatarsi aculeos 8 habent, unum fortius utrinque in ipso apice, 3 paria subtus. Abdomen ferrugineo-fuscum, vitta ordinaria dorsuali clariore parum manifesta, posterius lineis 3-4 albicantibus transversis, et inter eos, in medio, lineis brevioribus transversis paucis albicantibus quoque notatum. — Long. c:a  $5\frac{1}{4}$  millim.

*Femina* (verisimiliter hujus speciei). — Cephalothorax c:a  $3\frac{1}{2}$  millim. longus, æque saltem latus atque longus, longit. tibiam + metatarsum + tarsum pedum 3:tii paris æquans, in dorso fortius arcuato-convexus, fronte truncata, non rotundata, setis brevioribus sat dense sparsus; obscure ferrugineo-fuscus, parte cephalica postice lineis duabus albicantibus, angulum satis acutum formantibus, limitata, et inter series oculorum fascia transversa clariore notata; parte thoracica secundum medium, pone has lineas, albicanti-testacea, et præterea utrinque in latere vitta longitudinali, posteriora versus latiore, minus distincta, sub-testacea picta. Sternum et partes oris. palpi et pedes obscure ferrugineo-fusci, punctis vel lineolis clarioribus et nigricantibus sub-variata; pedes pilosi et aculeati setisque paucis sparsi, 1:mi et 2:di paris sub-æquales, fere 11 millim. longi; tibiæ anteriores subtus paribus 4-5 aculeorum armatæ, qui diametrum tibiæ longitudine non superant; metatarsi anteriores subtus et in lateribus utrinque 5-6 aculeos saltem habent, quorum utrinque 3 in et versus apicem in ped. 1:mi paris. Abdominis dorsum obscure ferrugineo-fuscum, antice paullo clarius sub-variatur, limbo albicanti et vitta media ordinaria dentata clariore parum manifestis, lineis transversis plus minus abruptis paucis utrinque, a medio versus anum, notatum; venter cinereo-fuscus. Vulva ex fovea sat magna et bene definita, rotundata, postice sub-aperta constat, nullo septo in fundo instructa, quæ fovea posteriora versus impressione minus profunda continuatur. — Long. c:a  $7\frac{1}{2}$  millim.

Patria: Bavaria (L. KOCH).

sexes communicated by CAMBRIDGE, to this variety. — As a distinguishing mark between the *forma principalis* of *X. cristatus* and its variety  $\beta$  or *pini*, may be considered the different form of the wedge-shaped dark middle-spot on the pars cephalica; this spot is in the chief form of the species gradually narrowed behind and reaches with its pointed extremity behind the centre of the cephalothorax, whereas in the Var.  $\beta$  it is shorter, not reaching to the middle of the cephalothorax, and more shortly and abruptly pointed behind. — *Thom. cinereus* BLACKW. (Spid. of Gr. Brit., I, p. 74, Pl. IV, fig. 43) is unknown to me.

BLACKWALL'S *Thom. cristatus*, judging from his description of the male's palpi (his figures of these organs in the species before us give but little help in the determination of species), is the same as WESTRING'S *Th. cristatus*, of which I have moreover, through the kindness of the Rev. Mr CAMBRIDGE, received specimens from England under the name of *Th. cristatus* BLACKW.

The spider figured in HAHN'S Monogr. Aran., 6, Tab. 1, fig. C under the name of *Thom. cristatus*, is an entirely different species, and certainly does not belong to the genus *Xysticus*. — That *X. cristatus* (CLERCK) is one of the species confounded by WALKENAER under his *Thom. cristatus*, is not indeed certain, but highly probable. The description he gives (H. N. d. Ins. Apt., I, p. 522) of the sexual organs, must however have been derived from a totally different and to me unknown species. He had previously, in Faune Franç., Arachn., p. 83, taken up "*Th. lituratus*" as a separate species, but in H. N. d. Ins. Apt. he places it among the synonyms of his *Th. cristatus*. This *Th. lituratus*, which he considers identical with *Ar. liturata* FABR. (Ent. Syst., II, p. 416) cannot be with certainty aggregated either to *X. cristatus* or to *X. Kochii* (*X. viaticus* C. KOCH). Among the names given by WALKENAER as synonyms of his *Thom. cristatus*, *Thom. ulmi* HAHN and *Thom. sabulosus* ID., to which we shall presently return, belong to species entirely distinct both from *X. cristatus* (CLERCK), and from *X. viaticus* C. KOCH. Neither does *Thom. Clerckii* SAV. et AUD.<sup>1)</sup> appear to me to be same spider as *X. cristatus*; different from this latter species are also *Aranea notata* LINN.<sup>2)</sup> — which is identical with *Therid. sisyphium* (CLERCK) —, *Ar. atomaria* PANZ.<sup>3)</sup> and *Ar. (Thom.) fucata* WALCK.<sup>4)</sup>, which SUNDEVALL (loc. cit.)

1) Descr. de l'Égypte (2<sup>d</sup>e Édit.), XXII, p. 398; Atlas, Arachn., Pl. VI, fig. 13.

2) Syst. Nat., Ed. 10, I, p. 621.

3) Fauna Ins. Germ., 74, 19.

4) Faune Par., II, p. 232; Faune Franç., Arachn., p. 72.

has cited under his *Thom. cristatus*. I also suspect, that *Thom. asper* LUCAS<sup>1)</sup> and *Xyst. græcus* C. KOCH<sup>2)</sup>, inserted by SIMON<sup>3)</sup> among the synonyms of *X. cristatus*, are separate and distinct species. — *Thom. lateralis* HAHN<sup>4)</sup>, considered by C. KOCH as a variety of *X. audax* (*cristatus*), is in my opinion the same as *X. lanio* C. KOCH: see above p. 232.

As regards the synonyms of *X. Kochii* or *viaticus*, it is probable, though by no means certain, that the *Ar.*, *Thom.* or *Xyst. viaticus* of the generality of German writers, as FABRICIUS<sup>5)</sup>, HAHN<sup>6)</sup>, PRACH<sup>7)</sup> etc., is, at least *ad partem*, to be referred to that species. OHLERT has confounded it with *X. impavidus* THOR. under the name of *X. lanio*<sup>8)</sup>: see above pag. 233; *X. viaticus* OHL.<sup>9)</sup> is a least *ad part.* = *X. lateralis* (HAHN) or *X. lanio* C. et L. KOCH, as appears from the specimens with which he has favoured me. *X. Kochii* is doubtless one of the species, which WALCKENAER has confounded under the name of *Thom. cristatus*<sup>10)</sup>. — *Aran. Kleinii* SCOP.,<sup>11)</sup> *Ar. liturata* FABR.<sup>12)</sup>, *Ar. fasciata* VILL.<sup>13)</sup> or *Ar. horticola* OLIV.<sup>14)</sup>, *Ar. audax* SCHRANCK<sup>15)</sup>, *Ar. subreptans* STRACK<sup>16)</sup> etc. undoubtedly belong to either *X. Kochii*, *cristatus* or some nearly related species, but to which, it is probably impossible with any degree of certainty to determine.

We proceed to give a description of the organs of copulation in the two species, the synonyms of which we have been endeavouring to illustrate.

1. *X. cristatus*. The bulbus genitalis has on its under side, at the base, two processes, of which the first, situated nearest the

1) BARKER-WEBB and BERTHELOT, H. N. d. Iles Canaries, Entom., Arachn., p. 32, Pl. 7, fig. 1.

2) Die Arachn., IV, p. 65, Tab. CXXXI, fig. 291.

3) H. N. d. Araignées, p. 523.

4) Die Arachn., I, p. 40, Tab. X, fig. 31.

5) Spec. Ins., I, p. 538; Ent. Syst., II, p. 411.

6) Die Arachn., I, p. 35, Tab. X, fig. 29.

7) Monogr. d. Thom. v. Prag, p. 613 (17).

8) Arachnol. Stud., p. 7; Aran. d. Prov. Preuss., p. 115.

9) Aran. d. Prov. Preuss., p. 113.

10) H. N. d. Ins. Apt., I, p. 521.

11) Ent. Carn., p. 398.

12) Ent. Syst., II, p. 416.

13) LINN. Ent., IV, p. 125.

14) Encycl. Méth., IV, p. 225.

15) Fauna Boica, III, I, p. 235.

16) Ueb. d. Sommerflug etc. p. 53–56, fig. B.

base and inner side, and pointing obliquely inwards, is strong and broad, compressed, claw-like, with a slender pointed extremity bent forward: on the base of this process, inward, is a fine, pointed tooth: on the posterior convex edge of the process, just where it curves forward, we sometimes meet with one or two very small elevated points or tubercles. The other process, which is longer and narrower, and situated a little in front of and outside the former or posterior, has the form of a long, sharp spine, abruptly bent at a right or rather acute angle; its first or basal part is somewhat curved and directed forward and inward, the long extremity being directed inwards and somewhat backwards. Immediately above the point where it is thus abruptly bent, it throws out a sharp tooth in the opposite direction, so that the whole process has the form of an irregular  $\perp$  or an anchor ("malleus lapicidarum": WESTR.). The lamina has at the base, on the outer edge, a strongly projecting, almost white, transparent, blunt process, which appears to include a black, curved bristle (the upturned end of the bulbus' long, circularly curved spine), which in dried specimens usually becomes separated from the pale process, and lies beside it, the process itself in such specimens being dried up to a thin thread. The outer process of the pars tibialis is short and thick, scarcely reaching to  $\frac{1}{4}$  of the length of the lamina; it terminates immediately behind the process of the lamina. The process on the under side of the tibial joint is about as broad as it is long, narrower in the middle, so that the anterior and posterior edges are concave; it dilates towards the extremity and is drawn out in front to an acute angle. The truncated extremity has a little notch at the posterior angle, and in a certain position a similar notch is visible also at the anterior, whereby a slightly three-toothed appearance is given to the process at its termination. The female's vulva is composed of two small rounded foveæ, separated by a longitudinal, narrow, in the middle contracted, almost  $\chi$ -formed, slightly elevated and flattened septum. Behind these foveæ may be perceived a small, shallower depression divided into two by a longitudinal elevation, which however is not always conspicuous.

2. *X. Kochii* (*X. viaticus* C. Koch). The bulbus genitalis has beneath, nearer the base, two tolerably strong processes of almost equal thickness, which at the root are close together (not widely separated as in *X. cristatus*), afterwards diverge, but have their extremities curved almost towards each other; that nearest the base is

is so curved as almost to resemble a *boot*, the *shaft* of which is but little thicker than the pointed *foot*, which is directed obliquely forward and inward. The second process is not slenderer than the first, also of about uniform thickness, and its short *blunt* extremity is curved inward and backward towards the foot of the boot; high above the bend, near its base, it gives off a sharp tooth in the opposite direction, which however is visible only in a particular, favourable position, and can therefore easily escape observation. The lamina bulbi has on its outer edge, at the base, a diaphanous process with a black bristle along its anterior side, much as in *X. cristatus*. The outer process of the pars tibialis is short, thick and pointed, as in *X. cristatus*. The process on the under side of the joint is longer than it is broad, broadest at the base, narrowed in the middle, with the posterior edge straight or slightly convex, the anterior concave; at the truncated extremity again it is somewhat dilated, and drawn out in front into an acute angle. The vulva in the only female specimen I possess of this species appears to be formed of a pale-coloured, somewhat transversal fovea, *imperfectly divided into two by a triangular process* extending backwards from its anterior border.

(Pag. 420). 5. *Th. calcaratus* [= *Xysticus calcaratus* (WESTR.) 1861].

*Syn.*: ?1851. THOMISUS AUDAX WESTR., Aran. Suec., p. 422 (*ad part.*: ♀; non ♂, nec "Var. b").

This spider, of which WESTRING sent me the type-specimen of his description, can, as regards its colour, scarcely be distinguished from dark individuals of *X. cristatus*, but is very remarkable for the form of its palpi, which bear a close resemblance to those of *X. sabulosus* ♂. The tibial joint's lateral process is rather short, triangular and somewhat blunt at the extremity; the lower process is not, as usual, directed downwards, but *forwards, parallel to the lateral process*; it is slenderer than in the allied species, thin, and slightly dilated towards the extremity, which is produced *downwards* and somewhat inwards, so that the process, when seen from the upper edge, has the form of *a narrow spur with the extremity curved inwards*. The lamina has a process on its margin *far in front of the apex of the tibial joint's lateral process*; the bulbus has no projecting processes on the under side towards the base, but *at its apex* it has *a fine and rather long spine curved forwards*.



At Söderköping and at Sättra I have met under stones with a few specimens of a *Xysticus*, which seem to be females to *Thom. calcaratus* WESTR. They agree exactly with a ♀, which WESTRING sent me under the name of "*Th. audax* ♀," wherefore I have also, although with a note of interrogation, taken up this latter name as a synonym to *X. calcaratus*. These females are in size and colour very like the darker varieties of *X. bifasciatus*, but are distinguished by a more truncated contour of the forehead and by the appearance of the vulva, which is composed of two pretty large, rounded or oval, dark, tolerably deep foveæ, separated by a septum, which, proceeding from their common anterior margin, is broader at the base, but afterwards narrowed; they are continued backwards by a small, shallower depression. The cephalothorax is  $3\frac{1}{2}$ — $3\frac{1}{2}$  millim. long, the patella + tibia of the 4<sup>th</sup> pair  $3\frac{1}{2}$ —4 millim. The marking of the upper part is similar to that of *X. cristatus* and *X. Kochii* (*viaticus*); the cephalothorax is surrounded by a fine, pure white line, the legs have on the upper side, along the greater part of their length, a narrow whitish line, which is particularly conspicuous on the first two pairs. The thighs of the two posterior pairs, and frequently even those of the two fore pairs, have a similar line on the under side. After the laying of the eggs, the colour becomes still darker, and the pale indented band along the back of the abdomen almost disappears. The animal then bears a striking resemblance to the spider, which C. KOCH in *Die Arachn.*, XII, Tab. CCCCXIV, fig. 1012 has figured as a variety of "*X. lanio*." — *Thom. Cambridgii* BLACKW. 1858 (Descr. of six newly disc. Spid. etc, in *Ann. and Mag. of Nat. Hist.*, 3 Ser., I, p. 426; *Spid. of Gr. Brit.*, I, p. 81, Pl. IV, fig. 47) appears to be nearly allied to *X. calcaratus*; Mr CAMBRIDGE, to whom I had sent one of the spiders considered by me to be females of *X. calcaratus*, assures me however that they are different from *Thom. Cambridgii* BLACKW. (of which species BLACKWALL has only described the female.

(Pag. 422). 6. *Th. audax* [= *Xysticus luctuosus* (BLACKW.) 1836  
+ *Xysticus calcaratus* WESTR. 1861?].

"Mas" et "Var. b":

*Syn.*: 1836. *THOMISUS LUCTUOSUS* BLACKW., *Charact. etc.*, in *Lond. and Edinb. Phil. Mag.*, 3 Ser., VIII, p. 489.

1856. *XYSTICUS CONVEXUS* THOR., *Rec. crit. Aran.*, p. 110.

1861. *THOMISUS LUCTUOSUS* BLACKW., *Spid. of Gr. Brit.*, I, p. 78, Pl. IV, fig. 45.

## "Femina":

?1845. *XYSTICUS LANIO* C. KOCH, Die Arachn., XII, p. 77 (*ad part.*: Tab. CCCCXIV, fig. 1012.

?1861. *THOMISUS CALCARATUS* WESTR. Aran., Suec., p. 420.

Of the spider which WESTRING describes as "*Th. audax* ♀", and which appears to me to be the female of *X. calcaratus*, see next preceding species, *Thom. calcaratus* WESTR.

The male, that WESTRING, though with an interrogation, has referred to his *Th. audax*, is, as well as the female described by him as "Var. b" of "*Th. audax*", identical with *Th. luctuosus* BLACKW., of which CAMBRIDGE has kindly sent me English specimens. I have in Rec. crit. Aran., loc. cit., described this species under the name of *X. convexus*, but without any certain knowledge of the female belonging to it, which however I have since met with in several places. Like the male, the female is of a darker colour than *X. cristatus* and *X. Kochii* (*X. viaticus* C. KOCH), more speckled, with the forehead less abruptly truncated, somewhat shorter legs and an entirely different form of the vulva: this organ has the form of a semicircular or transversal, large and deep fovea, rounded off in front and open behind, which is continued backwards by a narrower depression, exhibiting two longitudinal, more or less conspicuous, black spots. The cephalothorax is of a greyish or dark brown, marbled with paler spots towards the sides; the pale middle band has the form of a Y or a fork, which between its two anterior, short, prongs (which are continued forwards as fine lines) encloses the usual dark, in this species rather short, spot on the pars cephalica. The legs are usually dark brown, more or less thickly covered with greyish white spots or points, as indeed is the greatest part of the body. The central portion of the longitudinal dorsal band of the abdomen is in general altogether absent, and this band is then represented only by a double row of narrow, whitish transverse spots on a greyish brown ground; these spots are usually black- or brown-edged behind, and 2-4 on each side. The pale band round the upper side of the abdomen is also often wanting. The female is very similar to *X. fucatus* (WALCK.), in which however the forehead is more strongly rounded. the whole body, legs and cephalothorax as well as abdomen (the latter especially towards the sides), *thickly covered with short, very coarse bristles*, the spines on the legs shorter and stronger, etc. — On *X. fucatus* see more farther on under *Th. setosus* WESTR.

The *male* is distinguished by his dark colour (the fore tibiae are dark brown, scarcely paler than the thighs), his short, strongly arched cephalothorax, and especially by his palpi, the pars tibialis of which has the thin lateral process so long, that it almost reaches to the middle of the lamina, and terminating in a sharp, somewhat inward curved point; it has, when seen from the edge, the appearance of a fine, pointed spine curved uniformly inward; *under the anterior portion of this process*, and almost at right angles with its apex, appears a little process projecting from the margin of the lamina. The inferior process of the tibial joint is somewhat narrow, longer than it is broad, longitudinally excavated on the side that is turned inwards and forwards, almost semi-pipe-formed, so that its truncated extremity, seen from below, appears semicircularly emarginated, or, as BLACKWALL says, "terminating in the form of a crescent." The process also exhibits a longitudinal depression on the outer side. The bulbus has on its under side, in the middle and towards the inner side, a small elevation').

(Pag. 424). 7. *Th. cinereus* [= *Xysticus cristatus* (CLERCK) 1757, Var.]

On this species see above p. 237 under *Th. cristatus* WESTR.

1) Mr L. v. KEMPELEN has sent me a male *Xysticus*, which is very like *X. luctuosus*, but may be easily distinguished by its palpi having the process at the extremity of the outer side of the tibial joint much shorter, not reaching one fourth of the length of the lamina, and the inferior process of the same joint broad and cloven at the extremity; I call this species *X. Kempelenii*.

X. *Kempelenii* n. — *Mas.* Cephalothorax c. 2 1/2 millim. longus, in dorso arcuato-convexus, parum pilosus, fronte truncata; nigro-fuscus, antice V magno albicanti notatus, ex lineis duabus, apicibus posticis fere parallelis, tum valde divaricantibus et sub-incurvis, formato; maculis præterea paucis plus minus distinctis versus marginem utrinque, ut et summo margine albicantibus; fronte fascia albicanti transversa inter series duas oculorum ducta. Palpi testaceo-fusci, fusco-maculati, parte tibiali duplo latiore quam longiore, versus apicem dilatata, apice lateris exterioris, supra, paullo producto et mucrone vel spina brevi acuminata sub-incurva, anteriora versus et foras directa, parum ante basin laminae pertinenti, aucto; in latere partis tibialis exteriore, inferius, procursus latus, compressus excurrit, oblique deorsum, foras et anteriora versus directus, versus apicem dilatatus, non longior quam latior, apice sat profunde in lacinias duas obtusas inciso, lacinia posteriore augustiore, anteriore sub-triangulari. Lamina brevis, rotundata, procursu in latere exteriore ad basin minuto, parum conspicuo, pone apicem mucronis partis tibialis sito; bulbus subter paullo inæqualis, cochleiformis fere, in setam longam, totum fere bulbum circumdantem exiens. Pedes fusco-testacei, femoribus, patellis

(Pag. 426). 8. *Th. ulmi* [= *Xysticus ulmi* (HAHN) 1831 + *Xysticus erraticus* (BLACKW.) 1834].

Femina, et Mas ad part. (*Xysticus ulmi*):

- Syn.: 1831. THOMISUS ULMI HAHN, Die Arachn., I, p. 38, Tab. X, fig. 30.  
 1831. " " ID., Monogr. Aran., 6, Tab. 2, fig. 4.  
 1837. XYSTICUS " C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 25.  
 1856. " " THOR., Rec. crit. Aran. p. 110.  
 1861. THOMISUS BIVITTATUS WESTR., Aran. Suec., p. 417.  
 1871. " WESTWOODII CAMBR., Descr. of some Brit. Spid. etc., in  
 Transact. of the Linn. Soc., XXVII, p. 403, Pl.  
 54, no. 7.

Mas ad part. (*Xysticus erraticus*):

- Syn.: 1834. THOMISUS ERRATICUS BLACKW., Researches in Zool., p. 408 (sec.  
 Spid. of Gr. Brit.).  
 ?1838. XYSTICUS BIFASCIATUS C. KOCH, Die Arachn., IV, p. 59 (ad part.: ♂)  
 Tab. CXXV, fig. 286.  
 1861. THOMISUS ERRATICUS BLACKW., Spid. of Gr. Brit., I, p. 71, Pl. IV, fig. 40.

The female that WESTRING describes under this name, is unquestionably the same that HAHN calls *Thom. ulmi*. Under the male of

et tibiis pedum 4 anteriorum piceis; internodiis omnibus, tarsis posterioribus exceptis, apice plus minus late infuscatis; pedes 4 posteriores subter præsertim evidentius albicanti-variati; coxæ omnes lineis duabus longitudinalibus notatæ. Pedes 1:mi paris  $8\frac{1}{2}$  millim. longi, 2:di paris iis paullo breviores; tibiæ anteriores subter paribus 3—4 aculeorum, et præterea in latere utrinque aculeis 3 brevibus armatæ; metatarsi subter 2 paria aculeorum et præterea aculeum singulum in ipso apice utrinque habent. Abdomen ferrugineo-fuscum, plaga antica inæquali albicanti fusco-variata, quæ vittâ mediâ longitudinali ejusdem coloris continuatur; hæc vitta valde inæqualis, hic illic in lineas transversas vel maculas divulsa, interdum fere deleta; utrinque ab ea ab limbum abdominis clariorem rectis fere angulis abeunt lineæ 3—4 albicantes, postice fusco-marginatæ; supra anum præterea lineæ paucæ albicantes transversæ conspiciuntur, posteriora versus gradatim longitudine decrescentes. — Long. c:a  $4\frac{1}{2}$  millim. — *Femina* ignota.

Patria: Austria? (L. V. KEMPFLEN).

Another species, which by the form of the bulbus is allied to *X. luctuosus*, but in which the exterior process of the tibial joint is much shorter, and obtuse, not pointed, and the inferior process truncated at the extremity, is the following:

*Xysticus Ninnii* N. — *Mas*. Cephalothorax c:a  $2\frac{1}{2}$  millim. longus, dorso satis æqualiter arcuato-convexo, fronte truncata; nigro-fuscus, margine concolore, linea transversa albicanti inter oculos, vittaque media lata testacea; hæc vitta antice maculam amplectitur fuscam, sub-cuneatam, postice acuminatam, lineis duabus albicantibus inæqualibus, sub-incurvis, postice appropinquantibus inclusam: vestigia fasciæ lateralis testaceæ adsunt quoque. Mandibulæ fusæ, testaceo-maculatæ. Palpi testacei, fusco-punctati et -sub-maculati, parte femorali subter fusca: pars tibialis versus apicem dilatata, latior quam longior, apice lateris exterioris

his *Th. ulmi*, WESTRING has confounded the real male of *X. ulmi* with *X. erraticus* ♂, as may easily be perceived by the description of the male's bulbus, and as I have found from specimens, which WESTRING has kindly sent me. I have frequently taken both sexes of *X. ulmi* in damp localities in central Sweden, especially at Sättra, and in Germany I have met with it at Travemünde. I have in my collection specimens of both sexes determined by WESTRING himself as his *Th. ulmi*.

WALCKENAER, BLACKWALL and SIMON place *Thom. ulmi* HAHN among the synonyms of *Th. (X.) cristatus*, but this is not correct. We may by the colour alone (conf. HAHN's figures and WESTRING's description above referred to) without difficulty distinguish these two species, and the structure of the sexual organs both of the ♂ and ♀ *X. ulmi* immediately shows that this species is perfectly distinct from *X. cristatus*, *X. Kochii* (*viaticus* C. KOCH) and others, with which it might be confounded.

As regards *Th. bivittatus*, I have been enabled by the kindness of Prof. STÅL to examine the specimen, from which WESTRING's description is taken, a dried and ill preserved ♂, and I have found that it is nothing else than a pale-coloured specimen of *X. ulmi*. I could not discover the least dissimilarity in the organs of copulation. The following remarks on an ordinary specimen of *X. ulmi* ♂ perfectly suit *Th. bivittatus*.

in procursum obtusum, ipsa parte paullo brevior, paullo tantum ante basin laminæ pertinentem, producta; subter in latere exteriori alium procursum ostendit paullo longior, quam latior, anteriora versus et foras directum, versus apicem dilatatum, in apice truncatum, angulo apicis interiore producta et interiora versus curvata. Lamina brevis, margine exteriori, ante medium, angulum obtusum formanti; bulbus subter æqualis, leviter convexus, apice tantum impressum vel sub-emarginatum ibique in spinam acuminatam, foras et retro directam et sub-curvatam, sub angulo marginis laminæ locatam, producta. Pedes testacei, coxis, femoribus et patellis 4 anterioribus nigro-piceis, tibiis quoque horum pedum basi anguste infuscatis; pedes 4 posteriores fusco-sub-maculati et -punctati. Tibiæ et metatarsi 4 antici subter quaternis paribus aculeorum longorum armati. Pedes 1:mi paris 8½ millim. longi, 2:di paris iis saltem non breviores. Abdomen breviter et inverse ovatum, dorso fusco, limbo albicanti sat lato et æquali; per totum dorsum extenditur vitta media sub-testacea inæqualis, postice utrinque subdentata et versus anum in maculas transversas divulsa: pone medium ab hac vitta exeunt utrinque lineæ vel fasciæ duæ vel tres obliquæ, breves, vix ad limbum pertinentes.

Long. c. 5 millim. — *Femina* ignota.

Patria: Italia (CANESTRINI).

The bulbus genitalis in *X. ulmi* ♂ has beneath, near its base, on a common protuberance, two short, pointed spines, curved in the form of a crescent, of which the exterior, situated nearest to the base, is the smaller, and is bent inward and somewhat forward, the other being curved backwards; in most positions they appear to be curved in *opposite* directions. The lateral process of the tibial joint is very short and blunt, not in length exceeding its own breadth at the base, where it joins the inferior process of the joint: this process is broad, and its length somewhat greater than its breadth; it is rather narrowed towards the extremity, where it is obliquely truncated and rounded, so that the anterior edge is a good deal shorter than the posterior, uniformly convex border: the anterior angle is not acutely produced, but obtuse; the posterior angle is rounded off; a little notch in the rounded apex itself is sometimes visible. The process is longitudinally hollowed, with the lateral edges thickened. Immediately in front of the apex of the tibial joint's lateral process, a fine pointed spine projects from the external margin of the bulbus, directed outward and curved forward and upward; the lamina itself appears to have no process on its margin.

The female's vulva consists of a very small, almost triangular fovea truncated in front and narrowed behind, bounded by two short costæ converging backwards, and with a narrow, scarcely visible longitudinal septum in the pale bottom. A slight depression behind the fovea is seen in this as in most of the related species.

English specimens of *X. ulmi* have been kindly sent me by CAMBRIDGE under the appellation *Th. Westwoodii* CAMBR. <sup>1</sup>). — On *X. erraticus* (BLACKW.) and *X. bifasciatus* C. KOCH ♂, see above p. 234.

(Pag. 428.) 9. **Th. lineatus** [= *Xysticus lineatus* (WESTR.) 1851].

*Syn.*: 1851. THOMISUS LINEATUS WESTR., Förteckn. etc., p. 61.

This remarkable species, which is easily recognized both by its colour and the form of its palpi (Conf. WESTRING's description), appears not to be mentioned by any other writer than WESTRING.

1) CAMBRIDGE says (loc. cit., p. 405) that he has received specimens of *Th. Westwoodii* from Dr KOCH, of Nuremberg, under the name of *Thom. (Xysticus) audax*; this however must depend on some casual mistake; for Dr L. KOCH and several other German authors give the name *X. audax* to *X. cristatus* (CLERCK), as I see from specimens sent to me by L. KOCH, OHLERT and ZIMMERMANN.

I captured a ♂ *ad.* at Sättra in Westmanland, and I have received another from Öland from Mr A. E. HOLMGREN. The ♀ *ad.* is unknown to me.

(Pag. 430.) 10. *Th. sabulosus* [= *Xysticus sabulosus* (HAHN) 1831].

- Syn.*: 1831. THOMISUS SABULOSUS HAHN, Die Arachn., I, p. 28, Tab. VIII, fig. 4.  
 1845. XYSTICUS „ C. KOCH, ibid., XII, p. 64, Tab. CCCCXI, figg. 999, 1000.  
 1861. THOMISUS „ BLACKW. Spid. of Gr. Brit., I, p. 72, Pl. IV, fig. 41.

WESTRING has only seen imperfectly developed specimens of this species, which however fully agree with specimens in my collection from Germany, France and England, the last received from CAMBRIDGE under the name of *Thom. sabulosus* BLACKW. — The tibial joint of the palpus is very like that of *X. calcaratus*; its lateral process is short, broad, blunt at the apex, the inferior process thin, pointing forwards and outwards, almost parallel to the lateral process, and its apex is turned inwards, so that, when seen from the upper edge, it has the form of a narrow spur with the hooked point curved inward. The process on the outer margin of the lamina is situated far in front of the tibial joint's lateral process. The bulbus is destitute of any projecting process on the under side; even the fine curved spine, which distinguishes *X. calcaratus*, is wanting in *X. sabulosus*. The vulva appears to consist of two fine, somewhat curved, brown furrows rapidly diverging in front, and almost forming a V-shaped or semicircular figure, and of two small depressed black spots immediately behind these <sup>1</sup>).

1) The following, as it would seem, new species, is, like *X. sabulosus*, distinguished by an oblong, elliptical abdomen, considerably more elongated than in most species of the genus *Xysticus*.

*Xysticus perogaster* N. — *Mas.* Cephalothorax c:a 2 1/2 millim. longus, paullo longior quam lator, dorso antice parum arcuato, fronte truncata; ferrugineo-fuscus, vitta media lata cinereo-testacea, antice non dilatata, at ibi maculam fuscioram amplectenti, quæ postice acuminata est, interdum lineis duabus albicantibus, subparallelis, paullo incurvis in lateribus definita et per lineam angustam fuscam posteriora versus continuata; latera cephalothoracis vestigia vittæ supra-marginalis interdum ostendunt, vel maculis parvis clarioribus variata sunt. Frons, sternum et partes oris cinereo-testacea. Palpi cinereo-testacei, bulbo fusco; pars tibialis versus apicem dilatata, multo brevior quam lator, apice lateris exterioris, superioris, in procursum brevem producta, qui spina brevi, acuminata, nigra, in formam

(Pag. 431.) 11. *Th. setosus* [= *Xysticus setosus* (WESTR.) 1851].

*Syn.*: 1851. THOMISUS SETOSUS WESTR., Förteckn. etc., p. 50.

Of this species I have only seen one dried specimen, a probably not fully developed ♀, communicated by WESTRING. The species appears not to be described by any other author, unless it be a very young specimen of *X. fucatus* (WALCK.), which however does not seem very probable, as the bristles with which almost the whole body (not excepting the legs) is in both species covered, are in *X. setosus* longer,

fere literæ C incurva auctus est, hac spina paullo tantum ante basin laminæ pertinenti; in latere inferiore, exterius, procursus alter excurrit anteriora versus, deorsum paulloque foras directus: hic procursus longior quam latior est, versus apicem vix dilatatus, apice ipso rectis fere angulis truncatus. Laminæ margo exterior mox ante spinam partis tibialis tuberculum sat magnum, sed parum prominens, nitidum, testaceum ostendit; bulbus cochleiformis fere, medio impressus, in spinam sat crassam, versus apicem repente angustatam, circa apicem bulbi curvatam et ad tuberculum illud marginis laminæ pertinentem, exiens. Pedes cinereo-testacei, fusco-punctati, quaternis paribus aculeorum sat brevium et debilium subter in tibiis et metatarsis anterioribus; pedes 1:mi et 2:di paris æque longi, c:a 9 1/2 millim. Abdomen c:a 3 millim. longum, multo longius quam latius, anguste ovatum, cinereo-testaceum, dorso ferrugineo-fusco, limbo clarius cinereo-testaceo et interdum serie utrinque punctorum nigrorum circumdato; per totam longitudinem dorsi extenditur vitta media lata, in marginibus inæqualis, sed non acute dentata, postice angustata et per lineas tenues transversas obscuras in maculas divisa; in parte antica hujus vittæ vestigia interdum adsunt vittæ angustæ lanceolata, lineis fuscis duabus definitæ; postice, inter vittam dorsualem et limbum, maculæ paucae parvæ cinereo-testaceæ conspiciuntur. — Long. c:a 5 millim.

*Femina.* Cephalothorax paullo plus 3 millim. longus, paullo longior quam latior, dorso sub-recto, fronte lata (2 millim.), truncata; setis sat longis et crassis nigris sparsus, præsertim antice: vitta media longitudinali lata, sub-æquali, cinereo-testacea, antice lineis tribus longitudinalibus fuscioribus notata, quarum media usque in declivitatem posticam continuatur; latera cephalothoracis ferrugineo-fusca, summo margine clariore. Palpi, pedes, partes oris et sternum cinereo-testacea: pedes interdum supra fusco-lineati et -punctati; 1:mi paris 10 1/2 millim. longi sunt, 2:di paris iis paullo breviores; aculei subter in pedum 4 anteriorum tibiis et metatarsis, 4 paria in illis, in his vero 5, sat breves sed fortes; femora 1:mi paris aculeos 3 in latere anteriore habent. Abdomen ellipticum vel sub-ovatum, longius, c:a 4 millim. longum et 3 latum, colore ut in ♂. Vulva ex sulcis vel foveolis oblongis duabus sub-parallelis, costa media longitudinali testacea sat lata, convexa, duplo circiter longiore quam latiore disjunctis, constare videtur. — Long. c:a 7 millim.

Exempla pauca ad Kissingen Baviaræ a me ipso, et in Austria a Cel. v. KEMPELEN inventa examinavi.



especially on the abdomen, than in *X. fucatus*, and the four anterior tibiae have on the under side only *two* pairs of spines (and a little one just at the apex), not four or five pairs. The distance between the two posterior central eyes is slightly greater than that between the two anterior, and than that between the anterior and posterior central eyes. The distance between the anterior lateral and central eyes is double the lateral eye's diameter.

A ♀ *jun.*, which seems to me to belong to *X. fucatus* (WALCK.), (of which species I also have a specimen from Italy presented to me by Prof. CANESTRINI), has been found by me in the vicinity of Stockholm. This species has not before been recorded as Swedish. What PRACH<sup>1)</sup> means by *his X. fucatus*, which is said to be *destitute* of spines on the tibiae of the fore legs, it is not easy to discover: *X. fucatus* (WALCK.) has, as is already stated, at least 4—5 pairs of very short spines on the under side of the four anterior tibiae; the four anterior metatarsi also have 4 or more pairs of spines below, and 2 or 3 spines on either side. *X. fucatus* and *X. setosus* are both remarkable for their short and thick legs; the anterior tarsi are scarcely more than three times as long again as their greatest diameter. — On *X. fucatus* see also above p. 244.

(Pag. 432). 12. **Th. depressus** [= *Coriarachne depressa* (C. KOCH) 1837]

- Syn.*: 1837. THOMISUS DEPRESSUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 25.  
 1838. XYSTICUS „ „ ID., Die Arachn., IV, p. 67, Tab. CXXVI, fig. 292.  
 1851. THOMISUS DEPLANATUS WESTR., Förteckn. etc., p. 62.  
 1870. CORIARACHNE DEPRESSA THOR., On Eur. Spid., p. 186.

The pars tibialis has on the outer side two processes: the upper one, which points forwards, and lies close to the outer margin of the lamina, is very short, coarse, and blunt at the apex; the lower, pointing downwards and forwards, is longer, more than double as long as it is broad, thin, hollowed longitudinally above, with its point curved inwards and upwards. The bulbus exhibits at its apex a long, fine, corkscrew-formed spine; towards the base it is smooth and slightly arched, without any process. The vulva consists of two small, oval foveæ, situated close together and converging a little in front.

On the genus *Coriarachne*, vid. THOR., On Eur. Spid., p. 186.

1) Monogr. d. Thom. von Prag, p. 618 (122).

(Pag. 434). 13. **Th. dorsatus** [= *Diaea dorsata* (FABR.) 1777].

Syn.: 1777. ARANEA DORSATA FABR., Gen. Insect., p. 249.

1802. „ FLORICOLENS WALCK., Faune Par., II, p. 231.

1805. THOMISUS „ ID., Tabl. d. Aran., p. 33.

1831. „ DORSATUS HAHN, Die Arachn., I, p. 44, Tab. XI, fig. 34.

1861. „ FLORICOLENS BLACKW., Spid. of Gr. Br., I, p. 76, Pl. IV, fig. 44.

1870. DIAEA DORSATA THOR., On Eur. Spid., p. 184.

Concerning the genus *Diaea*, see THOR., On Eur. Spid., p. 184.

(Pag. 436). 14. **Th. horticola** [= *Xysticus horticola* C. KOCH 1831].

Syn.: 1837. XYSTICUS HORTICOLA C. KOCH, Uebers. d. Arachn.-Syst. 1, p. 26.

1838. „ „ ID., Die Arachn., IV, p. 74 (ad part.) Tab. CXXIX, figg. 296—298.

WESTRING'S *Thom. horticola*<sup>1)</sup> is = the chief form of the spider which C. KOCH in "Die Arachn." describes under the name of *X. horticola*. C. KOCH gives<sup>2)</sup> *Ar. atomaria* PANZ. as synonymous with his *X. horticola*, and it probably is so *ad partem*, i. e. if another species, which C. KOCH has confounded with his *X. horticola*, be, as I believe, the real *Ar. atomaria* PANZ. This *X. atomarius* (PANZ.)<sup>3)</sup>

1) OLIVIER had already in 1789 (Encycl. Méth., IV, p. 225) given the specific name *horticola* to another, unrecognizable *Xysticus*-species, GEOFFROY'S "Araignée brune à trois rayes transverses blanches," or *Ar. fasciata* FOURCR., Ent. Par., p. 532; but it seems hardly necessary on this account to give C. KOCH'S species a new name.

2) Krit. Revis. d. Ins.-Fauna Deutschl., III, p. 227; Die Arachn., IV, p. 76.

3) *Xysticus atomarius* (PANZ.) — Fusco-vel luteo-testaceus, evidenter pilosus, cephalothorace utrinque vittis duabus nigricantibus, femoribus anterioribus plerumque dense nigro-punctatis (praesertim subter), femoribus 1:mi paris supra aculeis binis, longitudine diametrum tarsorum superantibus, 2:di et 3:tii paris aculeo singulo armatis; pedibus posterioribus nigro-sub-maculatis; abdominis dorso antice lineis duabus geminatis postice divaricantibus, tum, in medio, linea ejusmodi una et macula transversa utrinque, postice demum vittis transversis 3—4, in medio plerumque abruptis, gradatim minoribus, notato; lateribus abdominis utrinque vitta plus minus distincta: omni hac pictura ex punctis maculisve nigricantibus densis confecta, in junioribus plerumque magis distincta quam in adultis. — Long. cephalothoracis c:a 2 millim., tibiae + patellae 1:mi paris c:a 2 millim.

Syn.: 1801. ARANEA ATOMARIA PANZ., Faun. Ins. Germ., 74, 19.

1837. XYSTICUS PULVERULENTUS C. KOCH, Uebers. d. Arachn.-Syst. 1, p. 26.

is identical with *X. horticola* OHL., according to specimens given to me by OHLERT himself. *X. pulverulentus* C. KOCH, very briefly characterized in Uebers. d. Arachn. Syst., 1, p. 26, but never afterwards specially mentioned by KOCH, I also consider as a synonym to it: it is beyond all doubt that "*X. pulverulentus*" is the form, which C. KOCH subsequently, in Die Arachn., IV, described as a variety of *X. horticola*, and declared to be = *Ar. atomaria* PANZ. Moreover *Thom. versutus* BLACKW. is, as I find from specimens with which CAMBRIDGE has kindly furnished me, identical with this *X. atomarius*. Whether WALCKENAE'S<sup>1)</sup> and BLACKWALL'S<sup>2)</sup> *Thom. atomarius* belong to either of the species here in question, and, if so, to which, is more than I can venture to decide; and the synonym *Th. lynceus* LATR.<sup>3)</sup> appears to me to be equally doubtful. Together with the last mentioned species, WALCKENAE and BLACKWALL under their *Th. atomarius* take up *Th. similis* REUSS<sup>4)</sup> as synonymous; but as this species is stated to have three pairs of spines on the under side of the fore tibiae, I do not venture to refer it to either of the two species before us, in which these tibiae only exhibit two pairs of spines on the under side. Neither do the spiders called by SAVIGNY and AUDOUIN<sup>5)</sup> "*Th. Diana* WALCK.?", and which WALCKENAE takes up as varieties of his *Th. atomarius*, appear to me to belong to *X. atomarius* (PANZ.) NOB.

*X. atomarius* (PANZ.) NOB., of which I have found a ♂ *jun.* in Upland, and received fullgrown and young females from Skåne through Mr EISEN and from the Finnish Lappmark from AL. v. NORDMANN, is not so smooth and hairless as *X. horticola* C. KOCH, (WESTR.). It has on the thighs of the first pair two, and on those of the second and third pairs one short spine, even in the female, whereas the female of *X. horticola* is destitute of spines on the thighs. In the only full-grown male *X. horticola*, that I possess, the thighs of

1838. XYSTICUS HORTICOLA C. KOCH, Die Arachn., IV, p. 76 (*ad part.*); Tab. CXXIX, fig. 299.

1853. THOMISUS VERSUTUS BLACKW., Descr. of some newly disc. spec., cet., in Ann. and Mag. of Nat. Hist., 2 Ser., XI, p. 15.

1864. " " ID., Spid. of Gr. Brit., I, p. 83, Pl. IV, fig. 49.

1867. XYSTICUS HORTICOLA OHL., Aran. d. Prov. Preuss., p. 118.

1) Hist. Nat. d. Ins. Apt., I, p. 523.

2) Spid. of Gr. Brit., I, p. 74, Pl. IV, fig. 42.

3) Gen. Crust. et Ins., I, p. 112. — Conf. *Th. lynceus* LEACH, in The Edinb.

Cyclopaedia, VII (*Art. Crustaceology*), p. 426.

4) Zool. Misc., Arachn., p. 268 (274), Pl. XVIII, fig. 8.

5) Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 399, Pl. VII, figg. 1, 2.

the first pair have, the one two, the other three *very short*, almost conical spines (considerably shorter than in the ♂ of *X. atomarius*), those of the 2<sup>nd</sup> pair respectively one and two very close together, those of the 3<sup>rd</sup> each one; the thighs of the 4<sup>th</sup> pair have, the one one spine, the other none. In ♀ at least the thighs of the 2<sup>nd</sup> and 3<sup>rd</sup> pairs have each a very little spine, which is however occasionally absent. The spines of the tibiae and metatarsi are in both species the same both as regards number and situation.

In *X. horticola* ♂ the tibial joint of the palpus is very complicated. On the outer side it sends out two processes, one from the apex, lying like a thin plate close to the edge of the lamina, the other boldly projecting outwards, strong, tapering towards the extremity and somewhat curved forwards: on the under side the joint has a broad, strong process, *deeply cloven* into two compressed branches, the outer of which is thinner and more pointed, the other somewhat coarser, thickened at the apex, slightly curved upwards and a little inwards. The bulbus, beneath, is swelled into a high, blunt protuberance; towards its extremity appears a long, fine, spirally curved spine; at the base it has a little crooked hook. — The vulva exhibits two large, black, oblong or almost triangular spots with the point directed outwards and somewhat forwards, and in front of them two small, dark points close to each other.

In *X. atomarius* (PANZ.) NOB. ♂ the extremity of the tibial joint of the palpus has above, towards the outer side, a forward-pointing, short, triangular process, lying close to the lamina: from the outer side of the joint issues a strong, pointed process, directed outwards and curved forwards (just as in *X. horticola*); from its under side, outwards, issues a rather slender process, *slightly cloven* at the very apex, and directed downwards and forwards. The vulva in this species exhibits four spots of almost equal size, forming a rectangle, the two anterior however sometimes scarcely visible

(Pag. 438). 15. *Th. brevipes* [= *Xysticus brevipes* (HAHN) 1831].

Syn.: ?182.. THOMISUS BREVIPES HAHN., Monogr. Aran., 4, Tab. III, fig. C.

1831. " " ID., Die Arachn., I, p. 30, Tab. VIII, fig. 25.

1837. XYSTICUS " C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 25.

1837. " PRATICOLA ID., ibid., p. 26.

1838. " " ID., Die Arachn., IV, p. 77, Tab. CXXX, figg. 300, 301.

1856. XYSTICUS BREVIPES THOR., Rec. crit. Aran., p. 111.

1861. THOMISUS BREVIPES BLACKW., Spid. of Gr. Brit., I, p. 67, Pl. IV, fig. 37.

1867. XYSTICUS PRATICOLA OHL., Aran. d. Prov. Preuss., p. 117 (*saltem ad part.*).

I see no reason to doubt, that the species described by C. KOCH and OHLERT under the name of *X. praticola*, or *Thom. brevipes* WESTR., is really the same as *Th. brevipes* HAHN, Die Arachn., loc. cit. HAHN's figure in Monogr. Aran., which is unaccompanied by any description, is on the other hand rather dissimilar, and this has led WALCKENAER to refer it to *Thom. bufo* DUF.<sup>4)</sup>, which is a much larger species, and probably only met with in the south of Europe. PRACH<sup>2)</sup> indeed describes "*X. brevipes*" and "*X. praticola*" as two separate species, but both descriptions seem equally well to suit WESTRING's *Thom. brevipes*, of which I not only possess specimens from Sweden and Finland, but also from widely separated parts of Germany: PRACH does not mention any dissimilarities between his two species, to which I could attribute any weight. — *Thom. brevipes* BLACKW. (loc. cit.) and *Thom. brevipes* WALCK. (H. N. d. Ins. Apt., I, p. 503) may, it seems to me, be with tolerable certainty referred to *X. brevipes* (HAHN.), (WESTR.).

The male of *Thomisus incertus* BLACKW.<sup>3)</sup>, which in his whole habitus, the position of his eyes and the spine-armature of his anterior tibiae perfectly agrees with *Xysticus brevipes*, is easily distinguished from it by the thighs of the first pair having *three* spines, and those of the succeeding pairs *two*; the tibial joint of the palpus is on the outer side produced forwards into a broad disk, which at the extremity above is continued as a long, fine, *down-turned spine curved in the form of an S*; at the apex of the under side this joint has a slender process, directed forward and curved somewhat upward. *X. brevipes* has on the thighs of the 1<sup>st</sup> pair only *two* spines, and on the succeeding pair or pairs only *one*. The thighs of the 4<sup>th</sup> pair are without spines. The tibial joint of the palpus is, on the exterior side, greatly dilated and *thickened*, and

1) L. DUFOUR, Descr. de cinq Arachn. nouv., in Ann. gén. d. Sciences Phys., V, p. 206, Pl. LXXVI, fig. 4.

2) Monogr. der Thomisiden v. Prag, p. 617 (21), 620 (24). — I have in general not thought it necessary to increase the already sufficiently great number of synonyms by citations from this very indifferent "gekrönte Preisschrift".

3) Descr. of some newly disc. spec. etc., in Ann. and Mag. of Nat. Hist., XVIII, p. 297; Spid. of Gr. Brit., I, p. 86, Pl. IV, fig. 51.

emits at that point from the somewhat inwardly curved upper corner of the apex a fine pointed spine slightly curved inward, somewhat in the form of a C, and directed forwards; the inferior process of the joint is directed downwards and forwards, and is at the extremity slightly curved backwards. That the process on the under side of the tibial joint is at the extremity *cloven* ("zweitheilig") and furnished at the base with a slender auxiliary process pointing forward, as OHLERT states, I cannot among my specimens (among which are a full-grown male and a female sent to me by OHLERT himself under the name *X. praticola*) discover; possibly OHLERT may have confounded with *X. brevipes* or *praticola* some other, to me unknown species. The female has upon the thighs of the 1<sup>st</sup> pair *two*, on those of the 2<sup>nd</sup> and 3<sup>rd</sup>, *one* weak, uniformly thick, blunt spine. The vulva consists of a somewhat transverse area, surrounded by two fine costæ forming a ( ), and including two small almost egg-shaped foveæ narrower in front, which near their middle, on the anterior side, exhibit a dark (elevated?) spot. These parts are best seen when the animal is placed in spirits.

Among some spiders received from OHLERT, is one which appears to be new, and which I call *X. pusio* 1); it is closely related to

1) *Xysticus pusio* N., cinereus, cephalothorace subtilissime granulato, fusco, fascia media cinerea, aliaque laterali utrinque, ex maculis fusco-testaceis plus minus distinctis composita, parte cephalica plus minus infuscata, pedes fusco-testacei, fusco-maculati, pubescentes, non setosi, femoribus saltem 2 anterioribus aculeis binis, tibiis 4 anterioribus subtus aculeis 2 [inter basin et medium], 2, 1, vel (♂) 2, 2 tantum armati; abdominis dorsum antice clarius cinereum, macula vel linea nigricanti utrinque, vel (♀) lineis alternantibus longitudinalibus cinereis et albicantibus pictum, tum, in medio, maculis duabus, et demum utrinque serie ex maculis 3—4 nigris, binis lineâ transversâ albicanti antice nigro-marginatâ conjunctis, his maculis forma varia et plus minus confusis. — ♂♀ ad. Long. 2½—3½ millim.

*X. brevipedis* simillimus: ♀ vix a femina ejus nisi magnitudine paullo minore, colore abdominis (non tam dense nigro-maculati) et forma cephalothoracis distingui potest; a latere visum dorsum cephalothoracis in *X. brevipede* postice altius videtur, anteriora versus paullo declive, non omnino rectum, sed paullulo arcuatum, tuberculo oculorum lateralium non supra dorsum cephalothoracis surgenti; in *X. pusione* vero dorsum cephalothoracis omnino rectum usque ad oculos posticos procurrit, quorum laterales cum tuberculo suo altius eminent quam reliquum dorsum partis cephalicæ. Mas forma partis tibialis palporum sine negotio internoscitur: ejus latus exterius anteriora versus et foras productum est, ipso apice primum paullo foras directo, tum vero rectis angulis in spinam longam tenuem excurrenti, quæ spina fere recta est, parum S-formiter curvata et anteriora versus directa. Long. cephalothoracis 1¼—1½ millim. Frons antice paullo rotundata, et setis paucis munita, ut in *X. brevipede*; area oculorum 4 mediorum paullo longior quam latior, subrectangula; medii antici a lateralibus anticis non longius quam diametro oculi

*X. brevipes*, but may, I hope, be distinguished from it by means of the characteristics indicated in its description (see the foot-note).

(Pag. 441). 16. *Th. scabriculus* [= *Xysticus scabriculus* (WESTR.) 1851].

Syn.: 1851. THOMISUS SCABRICULUS WESTR., Förteckn. etc., p. 50.

1856. XYSTICUS „ „ THOR., Rec. crit. Aran., p. 111.

This remarkable spider is nearly allied to *Thom. claveatus* BLACKW., which however is quite a different species, as one may at once see from BLACKWALL'S description of the male's palpi. BLACKWALL'S *Th. claveatus* is destitute of the coarsely rugose longitudinal ridges on the cephalothorax, that distinguish *X. scabriculus*; its cephalothorax is chagrined with small thickly set elevated points; the diameter of its anterior lateral eyes is *greater* than the distance between them and the anterior centre eyes, not *less*, as is the case in *X. scabriculus*. Whether *Th. claveatus* WALCK. 1837<sup>1)</sup>, stated to be synonymous with *Thom. hirtus* LATR. 1819<sup>2)</sup>, be the same as the spider which BLACKWALL describes under that Walckenaerian specific name, appears to me very uncertain; the last-named species may however for the present be called *X. claveatus* (BLACKW.).

The tibial joint of the palpus in *X. scabriculus* ♂ is, on the outer side, produced into a coarse, broad process, somewhat dilated towards the obliquely truncated and, in its middle, slightly notched extremity, of which the anterior acutangular corner is somewhat drawn out forward; this process is directed downward, outward and slightly forward; on the under side of the joint projects a more slender process or blunt hook, directed downwards, but much curved forwards and, at the extremity, outwards. The bulbus has on its

lateralis distant. — Mas saltem non in femoribus 1:mi paris tantum, sed etiam in sequentibus binos aculeos habet; femora ejus omnia et patellæ posteriores, ut et tibiæ posteriores, ad basin fusco-maculata sunt, pedes præterea fusco-testacei; in ♀ pedes magis maculati. Abdomen feminae setis raris tenuibus apice clavatis sparsum. — Cum *X. claveatus* (BLACKW.) et *X. scabriculo* (WESTR.), ut qui setas clavatas etiam in *pedibus* habeant, non facile confundi potest *X. pusio*.

1) Spid. of Gr. Brit., I, p. 87, Pl. IV, fig. 52.

2) H. N. d. Ins. Apt., I, p. 510.

2) Nouv. Dict. d'Hist. Nat., 2<sup>e</sup> Éd., XXXIV, p. 41 (sec. WALCK.); Conf. also "*Thom. hirtus* LATR.?" SAY. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 397, Pl. VI, fig. 11.

under side two irregular, lamellar processes, of which the anterior, when viewed from the side, looks like a long spur pointing backwards, and being in the opposite direction drawn out into a little tooth. — In *X. claveatus* (BLACKW.) ♂, the outer side of the tibial joint of the palpus is drawn out forwards and outwards, and carries there, on its apex, upward, a strong, pointed, C-formed spine or spur directed outward and somewhat forward, and curved downwards; the tibial joint has also, on the under side, outward, at its apex a shorter, coarse process, which is obliquely truncated and, when seen in a certain direction, slightly notched at the extremity.

(Pag. 442). 17. *Th. vatius* [= *Misumena vatia* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS VATIUS CLERCK, Sv. Spindl., p. 128, Pl. 6, Tab. 5.  
 1758. ARANEA CALYCINA LINN., Syst. Nat., Ed. 10, I, p. 620.  
 1761. „ QUADRI-LINEATA ID., Syst. Nat., Ed. 12, I, p. 1032.  
 1763. „ OSBECKII, SCOP., Ent. Carn., p. 399.  
 1763. „ HASSELQUISTII ID., ibid.  
 1763. „ UDDMANNI ID., ibid., p. 400.  
 1775. „ SCORPIFORMIS FABR., Syst. Ent., p. 436.  
 1776. „ VIRGINEA MÜLL., Zool. Dan. Prodr., p. 194.  
 ?1777. „ SIGNATA FABR., Gen. Ins., p. 249.  
 1778. „ CITREA DE GEER, Mém., VII, p. 298, Pl. 18, figg. 17—22.  
 1804. „ QUINQUE-PUNCTATA PANZ., Syst. Nomencl., p. 164. (SCHÆFF.,  
 Ic. Ins. Ratisb., II, Tab. CLXXXVII,  
 fig. VII.  
 1804. „ ALBO-NIGRICANS ID., ibid., p. 173. (SCHÆFF., loc. cit., Tab.  
 CC, fig. VII.  
 1805. THOMISUS CITREUS WALCK., Tabl. d. Aran., p. 31.  
 1805. „ CALYCINUS ID., ibid., p. 32.  
 1805. „ DAUCI ID., ibid.  
 1831. „ PRATENSIS HAHN, Die Arachn., I, p. 43, Tab. XI, fig. 33.  
 1833. „ SCORPIFORMIS ID., Monogr. Aran., 7, Tab. 3, fig. a.  
 1833. „ QUADRI-LINEATUS ID., ibid., fig. b.  
 1838. „ CALYCINUS C. KOCH, Die Arachn., IV, p. 53, Tab. CXXIV,  
 figg. 283, 284.  
 1856. „ VATIUS THOR., Rec. crit. Aran., p. 72.  
 1861. „ CITREUS BLACKW., Spid. of Gr. Brit., I, p. 88, Pl. IV,  
 fig. 53.  
 1870. MISUMENA VATIA THOR., On Eur. Spid., p. 183.

Under this species PRACH<sup>1)</sup> classes "*Ar. cretata* PREYSSLER, in MAYER's Phys. Bal., 1791, p. 105", a work unknown to me. — Perhaps

1) Monogr. d. Thomis. v. Prag, p. 608 (12).



*Thomisus togatus* HAMMERSCHMIDT<sup>1)</sup>, from Baden near Vienna, belongs also to it; it is described in the following words: "Blassgrün mit röthlicher Einfassung des Thorax und schmaler röthlicher Längslinie auf dem Hinterleibe."

(Pag. 444.) 18. *Th. horridus* [= *Misumena truncata* (PALL.) 1772].

Syn.: 1772. ARANEA TRUNCATA PALL., Spicil. zool., 9, p. 47, Tab. I, fig. 15.

1775. HORRIDA FABR., Syst. Ent., p. 432.

1795. " CNICI SCHRANCK, Briefe ueb. d. Donaumoos, p. 148 (sec. EJUSD. Faun. Boic.)

1805. THOMISUS TRUNCATUS WALCK., Tabl. d. Aran., p. 31.

?1825—7 " MARTYNI SAV. et AUD., Descr. de l'Égypte (2<sup>e</sup> Éd.) XXII, p. 396, Pl. 6, fig. 9.

1838. " HORRIDUS C. KOCH, Die Arachn., IV, p. 49, Tab. CXXIII, fig. 280.

(Pag. 445.) II. PHILODROMUS [= *Artanes* THOR. 1869 + *Philodromus* (WALCK.) 1825 + *Thanatus* C. KOCH 1837].

As regards these genera, see THOR., On Eur. Spid. p. 180—181.

(Pag. 447.) 1. *Ph. fusco-marginatus* [= *Artanes fusco-marginatus* (DE GEER) 1778].

Syn.: 1778. ARANEA FUSCO-MARGINATA DE GEER. Mém., VII, p. 301, Pl. 18, figg. 23, 24.

1833. PHILODROMUS FUSCO-MARGINATUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 224 (salt. "adulti").

1837. ARTAMUS CORTICINUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 27.

1838. " " ID., Die Arachn., IV, p. 85, Tab. CXXXII, fig. 306.

1851. PHILODROMUS CINEREUS WESTR., Förtekn. etc., p. 50.

1856. ARTAMUS FUSCO-MARGINATUS THOR., Rec. crit. Aran., p. 103.

1861. PHILODROMUS CINEREUS WESTR., Aran. Suec., p. 448.

1870. ARTANES FUSCO-MARGINATUS THOR., On Eur. Spid., p. 180.

*Ar. fusco-marginata* DE GEER is quoted by WALCKENAER both under *Thomisus fucatus* WALCK.<sup>2)</sup> and *Philodromus aureolus* ID.<sup>3)</sup>

1) Neue Spinnen, in OKEN'S Isis, Jahrg. 1834, p. 746.

2) H. N. d. Ins. Apt., I, p. 505.

3) Ibid., p. 557.

SUNDEVALL's *Phil. fusco-marginatus* has by WALCKENEAR<sup>1)</sup> and BLACKWALL<sup>2)</sup> been referred to "*Ph. cespiticolis*", on which vid. inf. under *Ph. aureolus* and *Ph. cespiticolis* WESTR. By C. KOCH it is, together with *Ar. fusco-marginata* DE GEEB, referred to *Ph. dispar* WALCK. (*Ph. limbatus* SUND.). All these synonyms are erroneous. — From L. KOCH and OHLERT I have received German specimens of *Phil. (Artanes) fusco-marginatus* under the name of *Artamus corticinus* C. KOCH.

As regards *Ph. cinereus* WESTR., I cannot in this spider, of which WESTRING obligingly sent me the specimen on which his description is founded, see anything else than an *A. fusco-marginatus* with the rings on the legs and the white speckling of the abdomen unusually conspicuous. The vulva has exactly the same form as that of *A. fusco-marginatus*: it resembles, as WESTRING justly remarks, an  $\omega$ . Neither does the position of the eyes appear to me to differ, at least in the full-grown females, for also in *A. fusco-marginatus* the posterior lateral eyes form with the two eyes situated nearest to them a somewhat scalene triangle. The posterior row is somewhat less curved than the anterior, not, as f. inst. in *Ph. dispar*, so much as the anterior. The anterior row is slightly curved (a straight line touching the lower border of the two lateral eyes would cut the central eyes a little above their centres); the area of the 4 central eyes is fully as broad behind as it is long. the posterior central eyes are almost *smaller* than the anterior, just as in *A. fusco-marginatus*, as counterdistinguished from *Phil. tigrinus* WESTR. (*Art. pæcilus* N.), which, like *A. fusco-marginatus*, has 5 pair of spines on the under side of the fore tibiæ.

(Pag. 448). 2. **Ph. cinereus** [= *Artanes fusco-marginatus* (DE GEEB) 1778].

Vid. preceding species, *Ph. fusco-marginatus* WESTR.

(Pag. 450) 3. **Ph. limbatus** [= *Philodromus dispar* WALCK. 1825].

Syn.: 1825. PHILODROMUS DISPAR WALCK., Faune Franç., Arachn., p. 89.

1833. „ LIMBATUS SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 228.

1) H. d. Ins. Apt. I, p. 555.

2) Spid. of Gr. Brit., I, p. 95, Pl. V, fig. 58.

1833. THOMISUS LIMBATUS HAHN, Monogr. Aran., 7, Tab. IV, fig. *a*.  
 1845. PHILODROMUS LIMBATUS C. KOCH, Die Arachn., XII, p. 85, Tab. CCCCXVI, figg. 1017, 1018.  
 1861. „ DISPAR BLACKW., Spid. of Gr. Brit., I, p. 91, Pl. V, fig. 55.

The synonym here given from WALCKENAER seems to me perfectly certain, and I have therefore, in conformity with BLACKWALL, accepted the name *dispar* for this species, which SUNDEVALL, C. KOCH and several others have denominated *Ph. limbatus*. — WALCKENAER (Ins. Apt., I, p. 559) erroneously identifies SUNDEVALL's *Ph. limbatus* with his own *Ph. argentatus*, a to me unknown species, which is stated to have the abdomen "très-allongé, cylindrique". — *Ph. dispar* had already been mentioned by WALCKENAER 1805 in his Tabl. d. Aran. p. 37, under the name of *Thomisus dispar*, but it is not there characterized.

C. KOCH quotes under his *Philodr. limbatus*: SCHÆFF., Ic. Ins. Ratisb., I, Tab. XXXVII, fig. XI (= *Ar. litterata*, Var., PANZ., Syst. Nomencl., p. 53, 244); but that figure appears to me to represent a young specimen of *Epeira umbratica* (CLERCK). — The synonyms *Thom. griseus* HAHN and *Philodr. fallax* SUND., given by WALCKENAER (H. N. d. Ins. Apt., I, p. 554) as belonging to this species, are also incorrect. Nor does *Phil. fusco-marginatus* (DE GEER), SUND. belong to it: vid. preced. spec.

(Pag. 452.) 4. **Ph. tigrinus** [= *Artanes pœcitus* N.].

It is not easy to decide, whether *Philodr. tigrinus* WALCK. be the same species as that here described by WESTRING, as WESTRING supposes, or whether, as I think most probable, it be nothing else than *Art. margaritatus* (CLERCK), and accordingly not specifically different from *Ph. jejunos* WALCK. At any rate the specific name *tigrinus* cannot here be retained, for DE GEER's *Aranea tigrina* is evidently quite another species, and identical with *Artamus jejunos* C. KOCH, and may either, as is my conviction, be only a variety of *Art. margaritatus*, or, as C. KOCH and others have supposed, an independent species<sup>1</sup>). I have therefore considered myself obliged to exchange

1) Another "*Aran. tigrina*", apparently differing from all these forms, had already been described in 1776 (i. e. two years before DE GEER described his *Ar. tigrina*) by P. L. S. MÜLLER (LINNÆI Vollständ. Natur.-Syst., Suppl.- u. Register-Band, p. 342), according to MARTINI and GÖZE (LISTER's Natur.-Gesch. d.

WESTRING's name of the spider he has here described for a new appellation, and call it *Artanes pæcilus*. By having *five* pair of spines on the under side of the fore tibiae, the area of the central eyes *considerably longer than it is broad* behind, and the anterior row of eyes much more curved, *A. pæcilus* is easily distinguished from *A. margaritatus*, which it much resembles in form and colour. The vulva also is somewhat different: it is longer and narrower than in *A. margaritatus*, and appears to consist of two long and narrow foveæ, separated by a narrow septum. I have had the opportunity of examining the very specimens described by WESTRING, which however are much damaged; an adult female, from Silesia, has been kindly presented to me by Dr ZIMMERMANN, of Limburg on the Lahn. I have never myself met with this spider.

(Pag. 454.) 5. *Ph. margaritatus* [= *Artanes margaritatus* (CLERCK) 1757].

- Syn.*: 1757. *ARANEUS MARGARITATUS*, CLERCK, Sv. Spindl., p. 130, Pl. 6, tab. 3.  
 1758. *ARANEA LEVIPES* LINN., Syst. Nat., Ed. 10, I, p. 624.  
 1763. „ *WILKII* SCOP., Ent. Carn., p. 400.  
 1776. „ *ORNATA* SULZ., Gesch. d. Ins., p. 254, Pl. XXX, fig. 5.  
 1781. „ *LEVIPES* FABR., Spec. Ins., I, p. 539.  
 ?1805. *THOMISUS TIGRINUS* WALCK., Tabl. d. Aran., p. 34 (*ad part.*).  
 ?1825. *PHILODROMUS TIGRINUS* ID., Faune Franç., Arachn., p. 87.  
 182.. *THOMISUS LÆVIPES* HAHN, Monogr. Aran., 4, Pl. III, fig. B.  
 1831. „ „ ID., Die Arachn., I, p. 120, Tab. XXXIV, fig. 90.  
 1833. *PHILODROMUS TIGRINUS* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 225.  
 1837. *ARTANUS LÆVIPES* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 27.  
 1856. „ *MARGARITATUS* THOR., Rec. crit. Aran., p. 73.  
 1857. *PHILODROMUS PALIDUS* BLACKW., Suppl. to a Catal., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XX, p. 499.  
 1861. „ „ ID., Spid. of Gr. Brit., I, p. 93, Pl. V, fig. 56.  
 1867. „ *AMBIGUUS* ID., Notes on Spid., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., XX, p. 208.  
 1870. *ARTANES MARGARITATUS* THOR., On Eur. Spid., p. 180.

Var.  $\beta$ , *tigrinus*:

1778. *ARANEA TIGRINA* DE GEER, Mém., VII, p. 302, Pl. 18, fig. 25.  
 1801. „ *JEJUNA* PANZ., Faun. Ins. Germ., 83, 21.

Spinn.): "Die Tigerspinne (*Aranea tigrina*): der Körper gross und rostfarbig; der Hinterleib länglich oval, ziegel- oder rostfarbig und schwarz punktiert; das Bruststück oben auf der Länge nach eine gelbe Linie, die Seiten des Hinterleibes etwas blass; LINNÆUS in Schweden" [?]. Vid. MARTINI and GÆZE, loc. cit., p. 266.

1805. THOMISUS JEJUNUS WALCK., Tabl. d. Aran., p. 35.  
 ?1830. PHILODROMUS JEJUNUS ID., Faune Franç., Arachn., p. 97.  
 1845. ARTAMUS JEJUNUS C. KOCH, Die Arachn., XII, p. 83, Tab. CCCCXV,  
 figg. 1015, 1016.

As I have already stated in my Rec. crit., I cannot consider *Art. jejunus* as a different species from *Art. margaritatus*, as these two forms differ only in the colour, which is very variable in both of them. *Aran. margaritatus* CLERCK, *Ar. levipes* LINN. and *Ar. tigrina* DE GEER all beyond a doubt indicate one and the same, here in Upland very common, species, the last name however expressing a variety, which is identical with *Art. jejunus* (PANZ.), C. KOCH. Conf. the preceding species, *Phil. tigrinus* WESTR. — Of *Phil. pallidus* BLACKW., or *Phil. ambiguus*, as BLACKWALL renamed it after finding that it is not identical with the real *Ph. pallidus* WALCK. (*Thom. griseus* HAHN), CAMBRIDGE has favoured me with full-grown English specimens of both sexes.

The pars femoralis of the palpus in ♂ is evidently shorter than the patella of the 1<sup>st</sup> pair of legs, cylindrical, and almost as thick as the tibia; the pars patellaris is hardly  $\frac{1}{3}$  as long, but little slenderer, cylindrical, about half as long again as it is broad; the tibial joint is somewhat slenderer, but equally long and also cylindrical, only somewhat constricted at the apex, and there, on the outer side, furnished with two processes situated close together: the outermost, situated at the apex itself, is straight, somewhat pointed, and has the form of a short conical tooth lying close to the lamina; the other, posited a little lower down, is something longer, of almost uniform thickness, and slightly curved in the form of an  $\infty$ , with its point directed a little outwards. The lamina bulbi is somewhat broader than the diameter of the thighs of the first pair, scarcely longer than it is broad, much dilated inwards, towards the base, shortly egg- or pear-formed. The vulva seems to me to have the form of a pretty large, rounded fovea pointed in front, with two small dark points behind (?). --- WALCKENAER erroneously states that the 3<sup>rd</sup> pair of legs is longer than the 1<sup>st</sup>: in both ♂ and ♀ of both the forms "*levipes*" and "*tigrinus*", the lengths of the pairs of legs are in the order: 2, 1, 3, 4, the 3<sup>rd</sup> and 4<sup>th</sup> pairs being however nearly equal.

*Art. margaritatus*, as has already been said, varies greatly in colour. The ground is grey, from the lightest shades approaching blue or white, to greyish black. The cephalothorax is sometimes en-

tirely grey, only a little darker at the sides and paler longitudinally along the middle; sometimes (in the Var. *tigrinus* or *jejunus*) it exhibits behind two large black spots, and often also, near the centre, a similar triangular spot, with the point directed backwards, and a pair of irregular black spots on each side of the pars cephalica. The markings of the abdomen consist normally of an oblique black stripe or spot on the fore part of the side itself and a similar stripe somewhat behind the middle, also on the side, both bordered behind with white, and moreover a black stripe behind, on both sides, a little above the mamillæ; sometimes a couple of small oblique black stripes are met with on both sides in the middle of the hinder part of the back of the abdomen. Sometimes a *part* or even *the whole* of this marking disappears, and the abdomen is of uniform colour, throughout light or dark grey, occasionally sprinkled with small white spots. Or sometimes (Var. *tigrinus*) the above-mentioned spots on the sides and above the anus *are dilated into large irregular bands*, extending high up on the back of the abdomen, and usually uniting on its sides; there is in this case generally also a dark longitudinal spot in front, and smaller spots situated in pairs on the hinder part of the back of the abdomen. Sometimes the *anterior* lateral stripe is bordered behind and inwards by a pretty, *reddish* or *yellowish* patch; another also very pretty variety has behind the *posterior* black lateral stripe a *large, white or yellowish patch* on a dark grey ground. The colour of the legs varies in the same manner: in paler specimens the dark rings on the thighs are often indistinct: in very dark specimens the ground-colour of the legs, especially on the outer side, is black, with paler rings or spots. In all my specimens there is a *black stripe under the anterior side of the first pair of legs*.

(Pag. 457.) 6. **Ph. aureolus** [= *Philodromus aureolus* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS AUREOLUS CLERCK, Sv. Spindl., p. 133, Pl. 6, tab. 9.  
 1789. ARANEA AUREOLA OLIV., Encycl. Méth., IV, p. 226.  
 ?1789. „ INAURATA ID., *ibid.*, p. 225.  
 1804. „ QUADRI-LINEATA PANZ., Syst. Nomencl., p. 244. (SCHÆFF.,  
 Ic. Ins. Ratisb., III, Tab. CCXXVI, fig. VII).  
 1805. THOMISUS AUREOLUS WALCK., Tabl. d. Aran., p. 35.  
 1825. PHILODROMUS AUREOLUS ID., Faune Franç., Arachn., p. 92.  
 1834. THOMISUS AUREOLUS HAHN, Die Arachn., II, p. 57, Tab. LXII, figg.  
 144, 145.

1843. PHILODROMUS CESPITICOLENS BLACKW., A Catal., *et.*, in Transact.  
of the Linn. Soc., XIX, p. 123.  
?1861.        ,,        AUREOLUS ID., Spid. of Gr. Brit., I, p. 99, Pl. V, fig. 59.  
1861.        ,,        CESPITICOLIS ID., *ibid.*, p. 95, Pl. 5, fig. 58.

Full-grown male specimens of "*Ph. aureolus* BLACKW." and "*Ph. cespiticolis* ID." sent me by CAMBRIDGE, I can distinguish from each other only by the inferior process of the tibial joint being in the former abruptly truncated *straight across* at the apex, but in the latter *very obliquely*, so that the process is nearly *triangular*. From Dr L. KOCH I have also received specimens of what he calls *Ph. aureolus* and *Ph. cespiticolis*, completely agreeing with those sent me by CAMBRIDGE under the same names. Of the males in my collection (partly from Sweden and partly from Germany) I have been able, by means of the characteristics thus given by the inferior process of the tibial joint, to refer some to "*Ph. aureolus*" and others to "*Ph. cespiticolis*;" but some specimens are *transition-forms* between both, and which I cannot with certainty class as belonging more to the one than to the other of them. The *females* of these "*Ph. aureolus*" and "*Ph. cespiticolis*" I am quite unable to distinguish. I am therefore very much inclined to believe that they are not specifically different. BLACKWALL's figure of the palpi of his "*Ph. cespiticolis*" ♂ exactly suits "*Ph. aureolus*" ♂: for in that figure the inferior process of the tibial joint is quite rectangularly, not obliquely truncated. — That CLERCK's *Ar. aureolus*, as well as SUNDEVALL's and WESTRING's *Phil. aureolus*, comprises both these so-called species, appears to me certain; but that *Ph. cespiticolis* WALCK. (on which see also the next article, *Ph. cespiticolis* WESTR.) is the same as *Ph. cespiticolis* CAMBR. and L. KOCH, is not equally sure: WESTRING's "*Ph. cespiticolis* WALCK." is at least quite another species, and the same as *Ph. auro-nitens* AUSS.

The ground-colour of the female varies from dark brown to light yellow, and the markings are also very diversified. I possess several specimens of this species from North Germany, Austria and Switzerland, which perfectly agree with the Swedish. The form "*aureolus*" appears to be the most common in Sweden, whereas the *Ph. cespiticolis* of CAMBRIDGE and L. KOCH seems to be rarer. — See also next species.

(Pag. 459.) 7. *Ph. cespiticolis* [= *Philodromus auro-nitens* AUSS. 1867].

*Syn.*: †1833. *PHILODROMUS FUSCO-MARGINATUS* SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 224 (*ad part.*: "juniores").

†1851. „ *CESPITICOLIS* WESTR., Förteckn. etc., p. 51.

1867. „ *AURONITENS* AUSS., Die Arachn. Tirols, I, in Verhandl. d. zool.-bot. Gesellsch. in Wien, XVII, p. 165.

This species, younger individuals of which SUNDEVALL has confounded with *Ph. (Artanes) fusco-marginatus* (DE GEER), is nearly related to *Ph. aureolus*, and probably sometimes not easily distinguished from it. A ♀ *jun.* has been sent to me by WESTRING, and I have myself found a couple of adult specimens in Upland. A ♂ and a ♀ from Germany have also been kindly communicated to me by L. KOCH under the name of *Ph. auro-nitens* AUSS.

The *Ph. cespiticolis* of WALCKENAER — or *Ph. cespitum* WALCK., as it ought to be called<sup>1)</sup>, — considered by WESTRING as identical with this species, is a very uncertain synonym, and I think it is not impossible that it is only a variety of *Ph. aureolus*, perhaps the same that by CAMBRIDGE and L. KOCH is called *Ph. cespiticolis* (see preced. spec.). WALCKENAER takes up as synonyms to it: *Thomisus histrio* LATR.<sup>2)</sup> and *Philodr. collinus* C. KOCH<sup>3)</sup>, from works that I have not had the opportunity of consulting. He also quotes (erroneously) *Phil. fusco-marginatus* SUND. under his *Phil. cespitum* or *cespitolis*. WESTRING's *Ph. cespiticolis* is not, as WALCKENAER's similarly named species is said to be, distinguished from *Ph. aureolus* by a "moins bombé et plus large" cephalothorax. — In order to avoid further confusion, I have thought it best to give WESTRING's spider the name under which it has been described by AUSSERER: *Ph. auro-nitens*.

In colour *Ph. auro-nitens* closely resembles the darkest varieties of *Ph. aureolus*: the cephalothorax is dark brown, with a broad pale central band, and usually also a short, thick, V-formed white

1) *Aranea cespitum* 1802 (Faune Par., II, p. 230) = *Thomisus cespiticolens* 1805 (Tabl. d. Aran., p. 35) = *Philodromus cespitum* 1825 (Faune Franç., Arachn., p. 91) = *Phil. cespiticolis* 1837 (H. N. d. Ins. Apt., I, p. 555)!

2) Nouv. Dict. d'Hist. Nat., 2<sup>e</sup> Éd., XXXIV, p. 36.

3) HERR.-SCHÆFF., Deutschl. Ins., 130, 15, 16.



mark on the pars cephalica; the abdomen is dark brown on the sides; its upper part is in ♂ greyish or paler brown, with a dark brown lancet-formed central band in front, which exhibits two or three small white longitudinal spots on both margins: this band is continued by another broader band, narrowing towards the anus, in which a series of more or less conspicuous, angularly curved, pale lines may be observed. In the female a similar pattern may sometimes be seen on the abdomen; sometimes the entire back is brown, only with a darker lancet-formed band in front, and a row of small dark angular marks behind it. There are four dark points forming a trapezium on the anterior half of the back, as in *Ph. aureolus*. The brownish-yellow legs have conspicuous, darker rings.

In the two adult females that I have seen, the vulva has the form of a small, somewhat transversal, brown area, which at its hinder margin exhibits two black uneven elevations or short costæ, one on each side. In *Ph. aureolus* on the contrary it consists of a large pale fovea or area, bounded at the sides by two coarse black transversely striated costæ curved inwards, towards each other, and externally bordered with a brown longitudinal spot emarginated towards the middle. The tibial joint of the palpus in *Ph. auro-nitens* ♂ is a trifle *longer* than the patellar joint, fully double as long as it is broad, and, when viewed from the side, of *uniform thickness, not dilated at the apex*; it has at the extremity, on the exterior side, a process in the form of a slender, almost uniformly thick, shortly pointed, black spine, and a little below it a short, conical, black tooth. At the extremity, on the under side, it has a *somewhat broader, pointed* process, the extremity of which is depressed, and which, viewed laterally, presents the appearance of a *strong and sharp spur curved somewhat upwards*. In *Ph. aureolus* ♂ the tibial joint is rather *shorter* than the patellar, not fully double so long as broad, *somewhat dilated at the apex*, when viewed from the side. The exterior process forms a more powerful spine, tapering more gradually from the base outward; the inferior process is *broad and short*, broader than it is long, *broadly* (and often more or less obliquely) *truncated* (see above, p. 165), transversally depressed; at its base, on the outer margin, appears a conical black tooth, and on the opposite margin, nearer the apex, a little protuberance: viewed from the side it presents the appearance of a shorter, coarse, somewhat up-turned hook. — In *Ph. aureolus* ♂ the legs are usually of a uniform brownish yellow colour, rarely having indistinct darker rings.

(Pag. 459.) 8. **Ph. decorus** [= *Philodromus elegans* (BLACKW.) 1859].

- Syn.: †1851. PHILODROMUS FALLAX WESTR., Förteckn. etc., p. 51.  
 1859. „ ELEGANS BLACKW., Descr. af six newly disc. spec.,  
 cet., in Ann. and Mag. of Nat. Hist., 3  
 Ser., III, p. 92.  
 1861. „ „ ID., Spid. of Gr. Brit., I, p. 94, Pl. V, fig 57.

An English specimen of *Ph. elegans* BLACKW. has kindly been sent to me by the Rev. Mr CAMBRIDGE.

(Pag. 461.) 9. **Ph. fallax** [= *Artanes fallax* (SUND.) 1833].

- Syn.: 1833. PHILODROMUS FALLAX SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.  
 f. 1832, p. 226.  
 1863. „ DELETUS CAMBR., Descr. of 24 new spec., cet., p.  
 8563 (4).

Of this remarkable spider, which has only been met with on sandy sea-shores, I have only seen very young, undeveloped specimens. In the neighbourhood of Halmstad it has been taken by Dr F. v. SYDOW, and I myself captured two young ones at Travemünde in Germany. A. v. NORDMANN (Erstes Verzeichn. etc., p. 28) states that the species is found in Finnland. — A young specimen of *Philodr. deletus* CAMBR. I have received from CAMBRIDGE himself.

(Pag. 462.) 10. **Ph. griseus** [= *Artanes pallidus* (WALCK.) 1825].

- Syn.: 1825. PHILODROMUS PALLIDUS WALCK., Faune Franç., Arachn., p. 90.  
 1831. THOMISUS GRISEUS HAHN, Die Arachn., I, p. 121, Tab. XXXIV,  
 fig. 91.  
 1845. ARTAMUS „ C. KOCH, ibid., XII, p. 81, Tab. CCCCXV, figg.  
 1013, 1014.

For WESTRING'S *Ph. griseus* I have accepted WALCKENAER'S specific name *pallidus*, having not a doubt that the spider thus designated by him belongs to this species. Whether the figure of "*Thom. griseus*," which HAHN gives in the 4<sup>th</sup> No of his Monogr. Aran. (Tab. III, fig. 4), indicate the spider before us (and described by HAHN in Die Arachn. under the same name), or *Phil. dispar* WALCK. (*limbatus* SUND.), as WALCKENAER supposes, it is probably not possible with certainty to determine. — WALCKENAER quotes, though with an interrogation, *Thom.*

*griseus* HAHN, Die Arachn., also under his *Th. pilosus* (Ins. Apt., I, p. 524), which probably is a *Xysticus*, as is at least the case with *Th. Ialandii* SAV. et AUD. '), considered by WALCKENAER as identical with his *Th. pilosus*.

BLACKWALL's *Phil. pallidus* \*) is an entirely different species, and identical with *Art. margaritatus* (CLERCK): vid. sup., p. 263. — In a couple of papers by BELKE <sup>3)</sup>, where the names of some spiders are mentioned, "*Formicinus oblongus* WALCK." occurs, which probably is only a kind of slip of the pen for "*Philodr. oblongus* WALCK.", or "*Philodr. formicinus* WALCK."

(Pag. 464.) 11. **Ph. oblongus** [= *Thanatus oblongus* (WALCK.) 1802].

Syn.: 1802. ARANEA OBLONGA WALCK., Faune Par., II, p. 228.

+1805. THOMISUS OBLONGUS ID., Tabl. d. Aran., p. 38.

1825. PHILODROMUS OBLONGUS ID., Faune Franç., Arachn., p. 94.

1831. THOMISUS OBLONGUS HAHN, Die Arachn., I, p. 110, Tab. XXVIII, fig. 82.

1833. PHILODROMUS TRILINEATUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 127.

1837. THANATUS TRILINEATUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 28.

?1838. " PARALLELUS ID., Die Arachn., IV, p. 87, Tab. CXXXII, fig. 307.

1856. " OBLONGUS THOR., Rec. crit. Aran., p. 111.

1861. PHILODROMUS OBLONGUS BLACKW., Spid. of Gr. Brit., I, p. 100, Pl. V, fig. 60.

*Aranea trilineata* MÜLLER (Zool. Dan. Prodr., p. 192), which WALCKENAER and SUNDEVALL (loc. cit.) class under this species, certainly does not belong to it, but to *Linyphia bucculenta* (CLERCK), as does also LINNÆUS' *Ar. trilineata* (see above, p. 53). — *Th. parallelus* C. KOCH is perhaps not specifically distinct from *Th. oblongus*.

(Pag. 465.) 12. **Ph. formicinus** [= *Thanatus formicinus* (CLERCK) 1757 (+ *Thanatus arenarius* N.?)].

Syn.: 1757. ARANEUS FORMICINUS CLERCK, Sv. Spindl., p. 134, Pl. 6, tab. 2.

1) Spid. of Gr. Brit., I, p. 93, Pl. V, fig. 56.

2) Deser. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 398, Arachn., Pl. VI, fig. 12.

3) BELKE, Quelques mots sur le climat et la faune de Kamieniec Podolski, in Bull. de la Soc. Imp. d. Nat. de Moscou, XXVI (1853), I, p. 426; Esquisse de l'Hist. Nat. de Kamienietz-Podolski, *ibid.*, XXXII (1859) N:o 1, p. 100; Notice s. l'Hist. Nat. du district de Radomysl, *ibid.*, XXXIX (1866), I, N:o 2, p. 524.

1789. ARANEA FORMICINA OLIV., Encycl. Méth., IV, p. 226.  
 1802. „ RHOMBOICA WALCK., Faune Par., II, p. 228.  
 ?1804. „ TESTACEA PANZ., Syst. Nomencl., p. 65. (SCHÆFF., Ic. Ins. Ratisb., I, Tab. XLVII, fig. VIII).  
 1805. THOMISUS RHOMBOICUS WALCK., Tabl. d. Aran., p. 38.  
 1825. „ RHOMBIFERENS ID., Faune Franç., Arachn., p. 95.  
 ?1827. „ FABRICII SAV. et AUD., Descr. de l'Égypte (2<sup>e</sup> Éd.) XXII, p. 392, Pl. 6, fig. 3.  
 1831. „ RHOMBOICUS HARN, Die Arachn., I, p. 111, Tab. XXVIII, fig. 83.  
 1837. THANATUS FORMICINUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 28.

In *Philodr. Albin* SAV. et AUD. <sup>1)</sup>, which WALCKENAER <sup>2)</sup> classes under his *Phil. rhombiferens*, the palpal clava presents an appearance too different to allow of my placing that species among the synonyms of CLERCK's *Aran. formicinus*.

Under the names of *Philodr. formicinus*, *rhombicus* etc. two very closely related species have been confounded, and it seems hardly possible accurately to divide the above given synonyms between them. In that, which appears to be the most common in Sweden, and which therefore is entitled to retain the specific name *formicinus* (CLERCK), the upper part of the abdomen, with exception of the lancet-like black spot enclosed in a paler line, and a row of more or less indistinct black spots on each side, behind this spot (sometimes combining into transverse angular marks), is of a uniform brownish or reddish grey colour; the cephalothorax is dark brown with narrow borders of a paler hue and a broad pale central band, which on the pars cephalica is trisected by two dark parallel stripes; sometimes it displays a dark V-formed spot on the pars thoracica. The tibial joint of the palpus in ♂ is somewhat drawn out forwards on the outer side, where it runs out into a *forward directed, gradually tapering, regularly pointed*, rather short spine. The vulva (in dried specimens) appears as a long, narrow, nearly 8-formed area, bounded by two broad elevations or ridges. — In the other species, which may be called *Th. arenarius* (under which name I have received it from L. KOCH, who first pointed out to me its property as a separate species), the upper side of the abdomen has on both sides, behind the lancet-like spot (which is similar to that of *Ph. formicinus*), two blackish, sinuous lines converging towards the anus and sometimes resolved into spots: the area included by these lines

1) Loc. cit., p. 392, Pl. 6, fig. 4.      2) H. N. d. Ins. Apt., I, p. 559.

is darker than the sides of the back of the abdomen, and is bisected by a fine pale line, which extends from the termination of the lancet-like black spot towards the anus. The sides of the cephalothorax have, at least in the female, a broader pale lateral border; in the broad, pale central band one may observe a long, dark, more or less conspicuous, backward-pointing, wedge-formed spot, extending from the posterior eyes to the hinder declivity of the pars thoracica. The tibial joint of the palpus in ♂ has, at its apex, on the outer side, a process directed outwards, curved somewhat upwards, dilated at the extremity, and there broadly and obliquely truncated. The vulva consists of an area scarcely longer than it is broad, and bounded by two (-formed costæ gently curving towards each other.

A ♂ *jun.* of *Th. arenarius* I have captured here in Upland. Dr L. KOCH has had the kindness to present me with a ♂ and ♀ *ad.* from Nuremberg of this species.

(Pag. 467.) FAM. V. LYCOSIDÆ [= *Citigradæ* LATR., N.].

Vid. THOR., On Europ. Spid., p. 187.

(Pag. 468.) I. LYCOSA [= *Lycosa* (LATR.) 1804 + *Tarentula* (SUND.) 1833 + *Trochosa* (C. KOCH) 1848 + *Pirata* SUND. 1833].

Vid. THOR., op. cit., p. 189—193.

The genus *Lycosa* LATR., WESTR. is without question, among all larger groups of spiders, that, of which the synonyms are most difficult to disentangle. This is partly the result of the species being very like each other, and really difficult to distinguish; but the principal cause is no doubt to be looked for in the circumstance, that many authors have, in their descriptions, not understood how to make use of any other marks of distinction than such as are drawn from the colour, and have not seen the necessity of attending to many less conspicuous, but so much the more constant differences of *form*, such as small peculiarities in the relative size and position of the eyes, the length and breadth of the cephalothorax compared with certain joints of the legs, the spine-armature of the legs etc. A third source of difficulty lies in the careless and misleading manner, in which

the synonyms of these spiders have been treated by some writers, e. g. WALCKENAER. Under these circumstances it is evident, that many species, especially those of the older authors, cannot with absolute certainty, but only with more or less probability, be recognized.

It is nowhere of more special importance than in the description of Lycosoidæ, to give an accurate account of the organs of copulation both in the female and male, for in this group it not unfrequently happens, that these organs offer the only sure characteristics for distinguishing nearly allied species. The female's vulva is often more or less covered with hair, which must be removed by gentle friction, before an idea can be obtained of the appearance of that organ. It sometimes makes a great difference whether the animal be examined lying in fluid or whether it be dry, and it is probably in most cases necessary, when the animal is kept in spirits, to take it out of the same, and, when it is tolerably dry, rub off the hair and then immediately examine the vulva. Almost all the notices of the form of the sexual organs given in this work, are obtained from specimens thus dried for the occasion, and never from the animal as it lies in the spirit.

(Pag. 469.) 1. *L. septentrionalis* [= *Lycosa septentrionalis* WESTR. 1861].

This species appears to me, in consideration of the low pars thoracica of the cephalothorax, and the short and broad pars cephalica, with its somewhat slanting, not perpendicular, sides, to belong rather to C. KOCH's *Leimonia* than to his *Pardosa*, to which WESTRING would refer it. — The cephalothorax in ♀ is something ( $\frac{1}{2}$  millim.) shorter than patella + tibia of the 4<sup>th</sup> pair; its central band is short, narrowing backwards, and reaches forward only to the pars cephalica, and is geminated by the blackish central furrow. The side-bands are narrow and very conspicuous, their upper margin somewhat uneven. The vulva consists of a large elevated area, broader and truncated behind: its posterior angles are rounded off, and it has a slight depression in the middle of the posterior margin. This area has throughout its whole length a large oblong depression bounded by sharp edges, somewhat narrow in front, then rapidly widening, and afterwards narrowing again, with rounded sides and terminating in a point: its figure is something like that of a short-necked flask. This depression is divided into two parts by a long, narrow septum *gradually* increasing in breadth

backwards, and there longitudinally furrowed; on both sides of this septum, near its posterior extremity, is a tubercle. The male's palpi are brownish, with darker lamina; the patellar and tibial joints are white-hairy, as is also the lamina towards the base. The bulbus is at the base swollen into a large knob, the broad and uneven summit of which exhibits a little tooth on the outer side; the ad-joining part of the bulbus, separated from the basal portion by a depression, is also at its apex produced into a little point. From the midst of the inner side of the bulbus proceed, outwards, two transversal, diverging ridges or elevations, of which the posterior is thinner: viewed from the outer side of the bulbus, it assumes the appearance of a tooth two-pronged or cloven at the extremity.

In a ♂ *jun.* in my collection the whitish grey central line on the fore part of the abdomen is brought to a point backwards, and is bounded by two black borders slightly angularly bent in the middle; the abdomen moreover exhibits two rows of (5—7) small, pale spots: these rows are situated close together and converging backwards, and include between their anterior ends the posterior extremity of the central line. — Besides a dried ♂ and ♀ of this species, which were lent me by WESTRING, I have seen a ♀ *ad.* and ♂ *jun.* found at Valdres in Norway and kindly presented to me by Mr G. EISEN.<sup>1)</sup>

1) I have a ♂ and ♀ of a spider from Lappland, which both in size and form bears a strong resemblance to *L. septentrionalis*, but has totally different organs of copulation; for the sake of comparison the following description of it is here inserted.

*Lycosa lapponica* N., nigro-fusca, cephalothorace humiliore, vitta media antice abbreviata, ad partem cephalicam tantum pertinenti, vittaque utrinque supra-marginali satis angusta testaceis, albicanti-pilosis; pedibus ad maximam partem ferrugineo-fuscis (♀) vel luteis (♂), femoribus saltem supra luteo-maculatis; abdomine in (♂ saltem) cinereo-piloso, macula antica media sub-lanceolata, nigrore limitata; vulva ex excavatione magna constanti antice et utrinque sub-rectangula, postice truncata, septo medio longo, posteriora versus inæqualiter latiore persecta; bulbo genitali spina longa obliqua, ad basin sub-geniculata, apice paullo recurvo et acuminato, aliaque spina minore transversa ante et sub illa, denteque in medio marginis exterioris armato. — ♂ ♀ *ad.* Long. ♀ c:a 8, ♂ c:a 7 millim.

*Femina.* Cephalothorax formâ ut in *L. septentrionali* fere: 4 millim. longus, parte thoracica paullo depressa; nigro-fuscus, antice pilis longis nigris sparsus, vittis tribus ad longitudinem ductis luteis, quarum media antice ad partem cephalicam (in quam non continuatur) sub-truncata est, posteriora versus gradatim acuminata, forma fere cunei, sulco ordinario medio fusco geminata; vittæ laterales satis angustæ, aut integræ, aut lineis tenuibus transversis fuscis in maculas vel lineolas divisæ, ipso margine fusco æque fere lato atque vitta; vittæ omnes

(Pag. 472.) 2. *L. nemoralis* [= *Tarentula meridiana* (Hahn) 1831].

- Syn.*: 1831. *LYCOSA MERIDIANA* HAHN, Die Arachn., I, p. 20, Tab. V, fig. 16.  
 1833. „ *ACULEATA* SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 188.  
 1835. „ *PULVERULENTA* C. KOCH, in HERR-SCHÄFF., Deutschl. Ins., 131, 14, 15 (sec. KOCH, Die Arachn.)  
 1848. „ (*TARANTULA*) *NIVALIS* ID., Die Arachn., XIV, p. 199, Tab. DIV, figg. 1409, 1410.  
 1851. „ *NIVALIS* WESTR., Förteckn. etc., p. 54.  
 1856. *TARENTULA MERIDIANA* THOR., Rec. crit. Aran., p. [63.] 117.  
 1866. *TARANTULA NIVALIS* OHL., Aran. d. Prov. Preuss., p. 142.

tres albicanti- vel cinereo-pilosæ. Clypeus fuscus. Sternum nigro-fuscum, lutescenti-pilosum; mandibulæ ferrugineo-fuscae, maxillæ et labium quoque ferrugineo-fusca, apice testacea. Palpi fusco-ferruginei, parte femorali nigro-maculata. Pedes mediocres, 1:mi paris  $10\frac{1}{2}$ , 4:ti  $14\frac{1}{2}$  millim. longi (patella + tibia 4:ti paris  $4\frac{1}{2}$  millim.); ferrugineo-fusci, femoribus supra maculis binis lutescentibus longis, linea fusca ad longitudinem persectis, altera versus apicem, altera ad basin, ut in multis aliis; vestigia linearum clariorum etiam in patellis et tibiis supra adsunt. Abdomen nigricans, nigro- et cinereo-pilosum, pilis longis nigris præterea sparsum; vestigia maculæ anticæ mediæ lanceolatæ clarioris adesse visa sunt. (In exemplo Fennico hujus certe speciei hæc macula cinerea valde distincta est, nigro-marginata, et pone eam series duæ appropinquantes ex maculis majoribus obliquis cinereis formatæ ad anum sese extendunt; latera dorsi quoque cinereo-maculata vel -nebulosa). Venter dense luteo- (vel cinereo-) pilosus. Vulva ex fovea constat magna, marginibus elevatis, antice acutis, ad apicem (postice) incrassatis et rotundato-parallelis limitata: hæc fovea late et inverse sub-ovata est, vel potius formam fere quadrati, cujus angulus unus (posticus) late truncatus esset, refert; antice enim margines ad rectum fere angulum divaricant, tum utrinque ad rectum (at sub-rotundatum) angulum appropinquant, sed non coeunt: vulva enim septo medio per totam longitudinem in duas dividitur, quod septum primum angustum est, tum paullo latius, demum etiam latius (in formam fere rhomboidis dilatatum) et apice, ad rimam genitalem, truncatum.

*Mas* a ♀ differt cephalothorace paullo altiore, pone oculos vix depresso, vitta laterali cephalothoracis non in maculas divulsa sed continua, abdomine supra dense cinereo-piloso, antice macula media lanceolata cinerea nigro-marginata valde distincta notato, pedibus extus clarioribus, ferrugineo-luteis, partibus oris quoque et coxis subter luteo-fuscis. Cephalothorax  $3\frac{1}{4}$ , pedes 1:mi paris  $10\frac{1}{2}$ , 4:ti paris fere 14 millim. longi, patella + tibia 4:ti paris 4 millim. Palpi tenuiores, partibus patellari et tibiali luteo-fuscis, tibiali versus apicem parum dilatata, dimidio fere longiore quam parte patellari; lamina bulbi nigricans, cinereo-pilosa. Bulbus ad basin valde inflatus, tum repente humilior; a parte inflata, extus oblique et late truncata vel emarginata, exit aculeus sat fortis, longus, primum sub-porrectus, mox vero geniculato-curvatus et foras et paullo anteriora versus directus, apice acuminato rursus paullo retro curvato; aculeus alter, minor, tenuior, magis acu-



*Aran. aculeatus* CLERCK and *A. nivalis* ID., the former of which is by SUNDEVALL, the latter by C. KOCH identified with the spider before us, are both totally different species: see farther on under *Lyc. tæniata* WESTR. and *Lyc. inquilina* ID.; whereas the spider figured by HAHN loc. cit. under the name of *L. meridiana* is undoubtedly, as C. KOCH has already remarked, the male of *L. nemoralis* WESTR. HAHN has however, as may be seen from his description of the *cocon*, which is stated to be "greenish", confounded with *L. meridiana* the female of some other species, probably *L. lugubris* WALCK., with which HAHN's *L. meridiana* is by WALCKENAEER identified (Ins. Apt., I, p. 329). The dimensions given by HAHN ("4 lines") are too great, but by comparison with the measure given on p. 18 of "*L. cursor*", which is a variety of *L. tæniata* WESTR. or *L. nivalis* SUND., it is clear, that "*L. meridiana*" is smaller than that species, to which SUNDEVALL (loc. cit., p. 184) and WESTRING (p. 516), though with a note of interrogation, have referred it. The same measure (4 lines) which HAHN gives for *L. meridiana*, he also gives for e. g. "*Lyc. saccata*" (*amentata*) and "*L. piratica*". The dimensions that he attributes to the spiders described by him are very often much too great, and in general far from trustworthy. German specimens of *T. meridiana* or *nemoralis* seem however to be really somewhat larger than the Swedish: the cephalothorax in some of the German females in my collection is as much as 4 millim. long, whereas, as WESTRING correctly states, in the Swedish female specimens it does not usually exceed  $2\frac{3}{4}$  or 3 millim. — As the figure of *Lyc. meridiana* given by HAHN appears to me perfectly recognizable, I consider that I am not at liberty to reject the specific name given by him.

*L. borealis* SUND., which C. KOCH places among the synonyms of this species, is according to SUNDEVALL not a *Tarentula*, but a genuine *Lycosa*; see further on under the head of *L. borealis*.

By its slender, strongly tapering extremities, *L. meridiana* forms a link between *Tarentula* and *Lycosa*, but the form of the head

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minatus a latere bulbi interiore exit, magis appressus, foras directus, apicem sub basi aculei majoris occultans; ad medium marginis exterioris bulbus dentem acuminatum nigrum quoque ostendit.

Exempla duo, alterum masculum, alterum femineum, ad Karesuando Lapponiæ Torneensis a Cel. D:re H. WIDEGREN capta, in spiritu vini asservata, possideo; ex Etare Lapponiæ Fennicæ feminam quoque misit AL. v. NORDMANN. — Similima est hæc species *L. septentrionali*, a qua vero forma partium copulationis sine ullo negotio distingui potest.

(with a face considerably lower than the length of the mandibles, and with convex and slanting sides), as also the spherical cocoon, appears to me to indicate that its proper place is in the first-named of these genera.

On rubbing off the hair which covers the greater part of the vulva, it appears that this organ consists of two small, oval spots bounded by fine furrows, and of a bright white colour when in spirits; these spots are placed obliquely, diverging backwards, and are separated by a pretty broad and short, flat septum dilated behind. At the apex of that septum, immediately behind the above mentioned ovals, is a little black spot on each side. These black spots are all that is visible of the vulva, when the hair has not been rubbed off. The male has two small processes on the under side of the genital bulb; the posterior one, which is situated near the middle, is rounded at its apex, the other, which is posited immediately in front of the first, is dilated at the apex and cloven into two small pointed lobes. By this the male of *T. meridiana* is easily distinguished from *T. miniata* C. KOCH<sup>1)</sup>, the male of which is destitute of these processes, and in the female of which the vulva is almost exactly similar to that of *T. meridiana*, except that the two shining white ovals are almost parallel, not rapidly diverging backwards, as is the case in *T. meridiana*.

Of *T. miniata*, which has not hitherto been reckoned to the Swedish Fauna. Mr A. STUXBERG has met with a ♂ and ♀ *ad.* in island of Gotland.

(Pag. 474.) 3. **L. silvicola** [= *Lycosa lugubris* WALCK. 1802].

- Syn.*: ?1775. ARANEA DORSALIS FABR., Syst. Ent., p. 437.  
 1802. „ LUGUBRIS WALCK., Faune Par., II, p. 239.  
 1805. LYCOSA „ ID., Tabl. d. Aran., p. 13.  
 1833. „ SYLVICOLA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 176.  
 1833. „ ALACRIS C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 120, 17, 18 (sec. C. KOCH, Die Arachn.).  
 1836. „ SILVICULTRIX ID., Die Arachn., III, p. 25, Tab. LXXXII, figg. 182, 183.  
 1848. „ (PARDOSA) ALACRIS ID., ibid., XV, p. 39, Tab. DXIV, figg. 1443, 1444.  
 1861. „ LUGUBRIS BLACKW., Spid. of Gr. Brit., I, p. 27, Pl. II, fig. 10.

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1) Die Arachn., XIV, p. 196, Tab. DIII, figg. 1406—1408.

The *Lycosa*, which FABRICIUS (Syst. Ent., p. 437) calls *A. dorsalis*, "atra linea dorsali alba", and which has the "abdomen ovatum atrum basi parum albicans" and "pedes lividi", is probably, as also WALCKENAER and SUNDEVALL suspected, identical with the spider before us. As however C. KOCH and some other naturalists have reckoned *Ar. dorsalis* FABR. among the synonyms of "*Lyc. monticola*", and it certainly is not impossible that FABRICIUS had before him a male of some species of the *Lyc. monticola*-group — to which f. inst. *Ar. dorsalis* SCHRANCK<sup>1)</sup> evidently belongs —, I have not considered it advisable to accept the specific name *dorsalis* FABR. for this species. On the other hand *Lyc. (Ar.) lugubris* WALCK. is undoubtedly the male to WESTRING'S *L. silvicola*, as C. KOCH and BLACKWALL assume, and as may especially be inferred from the good and comparatively detailed description in Faune Franç., Arachn., p. 24. — *L. lugubris* HAHN<sup>2)</sup> on the contrary does not belong to this species, but probably to *L. inquilina* (CLERCK), WESTR.; which see farther on. — *L. silvicola* LUC.<sup>3)</sup> is also a totally different spider from that before us. — WALCKENAER<sup>4)</sup> erroneously includes *L. silvicultrix* C. KOCH and *L. alacris* ID. under his *L. vorax*.

In the German male specimens in my collection the upper side of the lamina of the palpus is at the base reddish or yellowish, darker towards the apex; this is rarely the case in the Swedish specimens, in which nevertheless a reddish, angularly bent, more or less conspicuous band may be traced across the dark lamina. In a ♂ of *L. lugubris* BLACKW. from England, sent me by Mr CAMBRIDGE, the lamina above is of uniform colour, yellowish brown. — Swedish specimens have been by Dr L. KOCH identified with "*L. alacris* C. KOCH". *L. silvicultrix* C. KOCH is evidently the same species as his *L. alacris*; also in *L. silvicultrix* the upper part of the lamina is said "to have a shade of red" (Die Arachn., III, p. 27).

At the base, outwards, of the long, pointed, forward directed and outward bent spine on the under side of the lamina bulbi, a little tooth is visible. The vulva consists of three triangularly disposed, more or less connected and conspicuous foveæ, forming an area rapidly dilating backwards, which at the rima genitalis is bordered by a transversal costa dilated at the extremities

1) Fauna Boica, III, 1, p. 239.

2) Die Arachn., I, p. 29, Tab. V, fig. 15.

3) Explor. de l'Algérie, Arachn., p. 115, Pl. III, fig. 6.

4) H. N. d. Ins. Apt., I, p. 313; IV, p. 392.

in front: a narrow longitudinal septum, which extends through the the area, forms with this costa a very distinct  $\perp$ , which is often also the approximate form of the whole area.

(Pag. 476.) 4. **L. arenaria** [= *Lycosa agricola* THOR. 1856].

*Femina* (et *Mas* ad part.?):

- Syn.*: †1834. *LYCOSA ARENARIA* C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 123, 15, 16 (sec. C. KOCH, Die Arachn.).  
 †1843. „ *PALLIDA* BLACKW., A Catal., cet., in Transact. of the Linn. Soc., XIX, p. 119.  
 1848. „ (*PARDOSA*) *ARENARIA* C. KOCH, Die Arachn., XV, p. 36, Tab. DXIV, figg. 1441, 1442.  
 †1851. „ *SACCATA* WESTR., Förteckn. etc., p. 52.  
 1856. „ *AGRICOLA* THOR., Rec. crit. Aran., p. 61.  
 1861. „ *FLUVIATILIS* BLACKW., Spid. of Gr. Brit., I, p. 31, Pl. II, fig. 13.  
 1867. *PARDOSA ARENARIA* OHL., Aran. d. Prov. Preuss., p. 136 (ad part.).  
 1870. *LYCOSA* „ L. KOCH, Die Arachn.-fauna Galiz., p. 41, 42.

*Mas* (salt. ad part.):

1861. *LYCOSA AGRESTIS* WESTR., Aran. Suec., p. 480. — Cet. synonym. vid. infra, in *L. agresti* WESTR.

SAVIGNY and AUDOUIN have already (Descr. de l'Égypte, XXII, p. 367, Pl. IV, fig. 3) described and figured another spider under the name of *Lyc. arenaria*; and as that species seems to belong to the genus *Lycosa* sensu strictiori (it is, for example, said of its cocoon, that it is "de forme lenticulaire"), the spider we are now considering cannot be allowed to retain the specific name *arenaria*. According to BLACKWALL himself, the spider which he in 1834, loc. cit., without description mentioned as *Lyc. pallida* WALCK. (= *Lyc. Wagleri* HAHN), was erroneously determined, and is identical with *L. arenaria* C. KOCH, on which account BLACKWALL has changed its name to *L. fluviatilis*; but the name *L. agricola* has the priority. — *L. saccata* C. KOCH is not, as WESTRING supposes, identical with his *L. arenaria* or *L. agricola*, but is a peculiar species not hitherto met with in Sweden, and nearly related to *L. amentata* WESTR., concerning which vid. infr. — *L. agricola* THOR. or *L. arenaria* WESTR. has probably often, perhaps even by CLERCK and LINNÆUS, been confounded with *L. amentata* (CLERCK).

The female of the next following species, *L. agrestis* WESTR., I cannot distinguish from *L. agricola* ♀ by any other mark than that the pale lateral band on each side on the cephalothorax is in *L. agrestis* ♀ continuous, but in *L. agricola* resolved into spots. That the cephalothorax in *L. agricola* is broader than in *L. agrestis*, as WESTRING states, I have not, after the comparison of a tolerably large number of specimens of both species, been able to discover. Examples are occasionally met with, of which it is, at least to me, a matter of doubt, to which of the two species they belong. The lateral bands in fact on the cephalothorax are indeed in such examples continuous, but coarsely indented or notched in the upper edge, and these notches are sometimes continued downwards as fine dark lines, in which case the continuity of the band is in reality broken. The males are distinguished by the ♂ of *L. agrestis* having all the tarsi black at the extremity only, and the palpi above only black-haired, whereas in *L. agricola* the tarsi of the first pair are black, only at the base a little yellowish, and the three subsequent pairs of tarsi uniformly yellowish, and the patellar joint and the extremity of the femoral joint of the palpi are white-hairy above. These characteristics, first recorded by L. KOCH, I have found confirmed in a ♂ of each species from Germany, which I have received from that arachnologist; some males, which I have captured here in Sweden in company with *L. agricola* and *L. agrestis*, all, according to these diagnostics, belong to *L. agrestis*. WESTRING appears not to have been acquainted with any really typical males of *L. agricola*; he says in fact of the male of that species: "tarsi antici extorsum plerumque ab apice versus medium nigri, reliqui tarsi minus late nigri". And of two males, which he sent me under the name of *L. arenaria*, the one precisely agrees with my specimens of *L. agrestis* ♂, and has also by Dr L. KOCH, to whom I sent it, been declared to belong to his *L. decipiens* (= *L. agrestis* WESTR.), whereas in the other, which I refer to *L. arenaria*, although the palpi have only a black (not also a white) hairy covering, the tarsi of the 1<sup>st</sup> pair are black, a little yellowish only at the base, the remaining tarsi yellowish, but dark at the extreme apex. Also in an unusually dark form from Gotland, which is probably only a variety of *L. agricola*, and to which we shall presently return, the tarsi are indeed in colour such as in the typical *L. agricola*, but the palpi on the upper side do not in general exhibit the least traces of white hair, but are entirely black-haired as in *L. agrestis*. One

may indeed, under such circumstances, reasonably entertain doubts of the specific difference between these two so-called species, and I shall not be surprised, if *L. agrestis* should at last be found to be only a variety of *L. agricola*. Nevertheless I ought to mention, that in the few ♂-specimens of *L. agricola* that I have had the opportunity of examining, I have found the outward and forward directed transverse piece or spine on the under side of the bulbus genitalis longer than in *L. agrestis* ♂, at least 3 times as long as it is broad, and somewhat tapering on both sides toward the blunt apex, whereas in *L. agrestis* it only appears to be 2—2½ times longer than it is broad, and rather obliquely truncated at its extremity. The specific distinction must depend upon whether this difference be constant or not: I for my part am most inclined to consider *L. agricola* and *L. agrestis* as varieties only of one and the same species.

BLACKWALL does not state that the lateral bands are resolved into spots in ♀ of his *L. fluviatilis*, and it seems therefore probable, that *L. agrestis* is also included in that species. His description of the colour of the male's tarsi shows that he had ♂ of the right *L. agricola* before him. C. KOCH's description of the lateral bands on the cephalothorax of his *L. arenaria* indicates that he also had seen specimens of *L. agrestis*; but his description of the male suits only *L. agricola*. OHLERT's description of the female of his *Pardosa arenaria* agrees only with *L. agrestis*, but the description of the tarsi, of which it is stated, that the dark ring at the extremity is often indistinct, "especially in the males", shows that he also had *L. agricola* before him. — L. KOCH has favoured me with full-grown German specimens of *L. agricola* under the name of *L. arenaria* C. KOCH, and of *L. agrestis* under the name of *L. decipiens* L. KOCH.

The vulva has exactly the same appearance in both species: it consists, like that of *L. monticola*, *L. palustris* (*tarsalis*), *L. hyperborea*, and some other species not hitherto found in Sweden — which might all be included under the appellation of "the *L. monticola*-group" — of a somewhat large, elevated, reddish brown area, broader behind: as in *L. monticola*, the posterior corners of this area in *L. agricola* and *L. agrestis* have the form of small tubercles pointing outwards, and are neither flat and rounded, nor bent forward. Near its anterior extremity this area in *L. agricola* and *L. agrestis* has on both sides, at the margin, a shorter, obliquely longitudinal depression or furrow, and along its middle extends a tolerably deep furrow somewhat dilated behind, which furrow thus

shows itself to be bounded by two low, broad, more or less curved costæ diverging backward.

*L. agricola* varies considerably both in size and colour. The lateral spots on the cephalothorax are often very small, sometimes altogether absent. From Gotland I have received a particularly dark, greyish black variety. In this variety the lateral spots on the cephalothorax are either very small or altogether wanting; the central band is also less distinct than in the chief form of the species, and its anterior (first contracted, then dilated) part has usually disappeared. The markings of the abdomen are scarcely visible, and the darker rings on the yellowish black legs are indistinct. The male, as has been already said, has the tarsi of the first pair black, slightly tinged with yellow at the base, the other tarsi of a uniform yellowish colour; but the palpi are entirely black-haired, without any traces of white hairy covering, a circumstance, which, combined with the unusually dark colour, makes this form a perfectly distinct variety. — *L. agrestis* has also its varieties, larger and smaller, darker or paler: one variety especially deserves to be noticed, as having the central band on the cephalothorax but little, if at all, dilated behind the posterior row of eyes, *narrow and equably drawn to a point in front*, as in *L. monticola* and *L. palustris (tarsalis)*, from which it is however easily distinguished by the form of the vulva, which, as well as the entire form and colour of all the rest of the body, is exactly the same as in the ordinary form of *L. agrestis*. That WESTRING also was acquainted with this variety, is plain from his expression: "Thoracis vittæ mediæ amplificatio lateralis pone oculos posticos sæpe deleta." Also of *L. agricola* or *arenaria* WESTR. individuals occur, where the central line of the cephalothorax, after rapidly narrowing in front of the middle furrow, is continued forward as a narrow, even line, *without* any dilatation behind the posterior eyes. (It is just such a variety that I, in Rec. crit., called *L. agricola*, erroneously imagining it to be identical with *L. saccata* C. KOCH). A form, of which I have found several females at Upsala and Pymont, has yellowish grey legs, with scarcely any traces of the darker rings, the central line of the cephalothorax narrow and uniformly pointed, but the lateral bands, vulva etc. exactly as in *L. agrestis*, of which it is assuredly only a variety.

Very nearly allied to *L. agricola* both in form and colour, is *L. amnicola* L. KOCH (loc. cit., p. 41): the male is however easily distinguished from *L. agricola* ♂ by having all the tarsi of

uniform yellowish colour (as in *L. monticola*, *palustris* etc.); the spine or transverse process on the under side of the bulbus is short, scarcely double as long as broad, transversely truncated and rounded at the extremity, with a longitudinal depression on the under side. — *L. amnicola* ♀ must be very difficult to distinguish from *L. agricola* ♀, if the spider considered by L. KOCH as the female of *L. amnicola* really be so. Dr KOCH has himself had the kindness to send me a couple of this spider, but I am scarcely able to distinguish the female from *L. agricola* ♀: the first eye-series is *perhaps* more *straight*<sup>1)</sup> than in *L. agricola* ♀, where it is slightly curved downwards; as to the other distinguishing mark for *L. amnicola* ♀: "Die Bauchseite des Abdomen und das Sternum *rein weiss* behaart" (in contradistinction from *L. agricola* ♀, in which the hairy covering of these parts is stated to be "*gelblich-weiss*"), I do not think it to be a reliable characteristic, for in many of my northern specimens of *L. agricola* ♀ the under side of the abdomen and the sternum is covered with hair of a pure white. The form of the vulva and the markings on the cephalothorax etc. appear to me to be quite the same in *L. agricola* and *L. amnicola* ♀.

WALCKENAER quite erroneously includes *L. arenaria* C. KOCH under his *L. vorax* (H. N. d. Ins. Apt., I, p. 713; IV, 392).

(Pag. 480.) 5. **L. agrestis** [= *Lycosa agrestis* WESTR. 1861].

Syn.: 1867. *LYCOSA ARENARIA* OHL., Aran. d. Prov. Preuss., p. 136 (*ad part.*).  
1870. „ *DECIPIENS* L. KOCH, Die Arachn.-fauna Galiz., p. 33.

On this species see the preceding, *L. arenaria* WESTR.

(Pag. 482.) 6. **L. albo-limbata** [= *Lycosa herbigrada* BLACKW. 1857].

Syn.: 1857. *LYCOSA HERBIGRADA* BLACKW., Descr. of the male of *Lyc. tarent.* Mader., *et.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XX, p. 285.  
1861. „ „ „ „ „ Spid. of Gr. Brit., I, p. 22, Pl. I, fig 6.  
1870. „ „ „ „ „ L. KOCH, Die Arachn.-fauna Galiz., p. 42.

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1) "Der untere Theil der Peripherie der Seitenaugen der ersten Reihe liegt in einer geraden Linie mit jenem der Mittelaugen." (L. KOCH, loc. cit.)



This very beautiful species, distinguished by its thick white hairy clothing, is as regards form, scarcely different from *L. tarsalis* or *palustris*. As in that species, the metatarsi and tarsi of the 1<sup>st</sup> pair in ♂ are somewhat, if not quite so conspicuously, thickened, with out-standing hairs on the sides; the spine under the bulbus genitalis appears to be still shorter and blunter than in *L. palustris*. The female's vulva has the same form as in that species: its posterior angles are strongly rounded off and dilated, and it has, along the middle, a deep, somewhat broad depression, a little broader behind, and also two small foveæ in front of the posterior margin. The colour is however quite different: the lateral bands of the cephalothorax are very broad, and uneven, almost dentated, on the upper border; the central band is much dilated behind the eyes; moreover a little light patch is usually (but not always) met with between the lateral and central bands, behind; the bands and the patches are thickly clothed with white or greyish white hair. The femoral joint of the male's palpi is clothed with white hair at its extremity, as are also the tibial and tarsal joints above. — English specimens of both sexes of *L. herbigrada* BLACKW. have been kindly sent me by Mr CAMBRIDGE. — BLACKWALL's figure of this species is very bad.

Another species, also distinguished by a thick white hairy clothing, is *L. albata* L. KOCH (loc. cit.); but in this species the female's white-hairy lateral bands are far narrower, not reaching the edge itself of the cephalothorax, the central band is but slightly dilated behind the eyes, and the posterior angles of the vulva are pointed; the basal half of the male's lamina bulbi is white-haired, and the tarsi and metatarsi of the 1<sup>st</sup> pair are of the ordinary form, not thicker than those of the succeeding pairs. Of *L. albata*, which has hitherto been found only in the Tatra-mountains and in Bukovina, Dr KOCH has obliged me with a ♂ and ♀.

(Pag. 483.) 7. *L. saccigera* [= *Lycosa nigriceps* THOR. 1856].

- Syn.: †1837. *LYCOSA MONTICOLA* WALCK., H. N. d. Ins. Apt., I, p. 328 (*ad part.*).  
 1848. " (*PARDOSIA*) *MONTICOLA* C. KOCH, Die Arachn., XV, p. 42,  
 Tab. DXV, (*ad part.*) fig. 1445.  
 †1851. " *SACCIGERA* WESTR., Förtekn. etc., p. 52.  
 1856. " " THOR., Rec. crit. Aran., p. 55 (*ad part.*: ♂;  
 non ♀).  
 1856. " *NIGRICEPS* ID., ibid., p. 56 (= ♀).  
 1871. " *CONGENER* CAMBR., Descr. of some Brit. Spid., cet., in  
 Transact. of the Linn. Soc., XXVII, p. 393, Pl. 54, no 1,

From the typical specimens of this species, which WESTRING kindly sent me, I find that he is right in his opinion (Aran. Suec., p. 486) that *L. nigriceps* THOR. is not different from his *L. saccigera*. The spider described by me (loc. cit.) as female to *L. saccigera* WESTR. is only a variety of *L. palustris* or *tarsalis*, distinguished by an unusually broad central band on the cephalothorax. — CAMBRIDGE has had the kindness to send me English specimens of his *L. congener*; according to an obliging communication of SIMON, that species is common in the neighbourhood of Paris.

I cannot think, that this species is, as WESTRING supposes, identical with *L. saccigera* WALCK. (Ins. Apt., I, p. 327); *L. monticola* WALCK., on the contrary, is with great probability referable to the species before us, at least *ad partem*, for of that species WALCKENAER says (loc. cit., p. 329): "elle diffère [de la *L. saccigera*] par des couleurs moins sombres dans la femelle, et ses pattes ne sont pas annelées comme dans la *Saccigère*." WESTRING'S species here before us is distinguished from *L. monticola* (CLERCK), *L. palustris* (LINN.) etc., by its legs being usually of one colour, not (only now and then slightly) marked with dark rings. WALCKENAER'S *L. saccigera* is probably the same as *L. palustris* or *tarsalis*, but possibly may also include other species, as *L. monticola* and *agrestis*; at any rate it appears best, at least for the present, to drop the name *saccigera*.

*L. nigriceps* has probably by others as well as WALCKENAER been mistaken for or confounded with *L. monticola* (CLERCK) and *L. palustris* (*tarsalis*); thus, as WESTRING has already remarked, the spider figured by C. KOCH in Die Arachn., XV, Tab. DXV, fig. 1445 as ♂ of *L. monticola*, appears rather to belong to *L. nigriceps* than either to *L. palustris* (*tarsalis*) or *L. monticola*.

Of the two synonyms given by WALCKENAER loc. cit. under his *L. monticola*, *Araneus amentatus* CLERCK is totally different from *L. nigriceps*, but *L. monticola* C. KOCH may possibly *ad partem* be identical with that spider. On this subject see more farther on under the head of WESTRING'S *L. tarsalis*.

*L. nigriceps* cannot be considered as belonging to the "*L. monticola*-group", from which it is distinguished by the form of its organs of copulation. The spine under the male's bulbus genitalis is in fact rather slender, regularly tapering to a point, bent somewhat outwards, directed forwards and a little outwards. The vulva forms an area broader behind, but slightly raised, longer than in the species of the *L. monticola*-group, and the sculpture of

which it is difficult enough to distinguish; it is of a brownish yellow colour, with in general a darker border, except in the middle, behind; at the anterior extremity, which is a little rounded off, the border is elevated, and the same is the case behind, where the area is truncated, and where its border forms a narrow, high costa, with one or two depressions at the angles on both sides. Two transverse depressions, one towards the apex in front, and one near the posterior border, are usually visible, and the intermediate area exhibits two or four somewhat indistinct longitudinal furrows (WESTRING thinks he has seen 3 or 5). — In *L. nigriceps* the head is higher and more projecting, and its sides more parallel than in any other *Lycosa* that I know of: the typical form of the cephalothorax of the genus appears to have reached its highest perfection in this species.

The three olive- or rusty-yellow bands on the cephalothorax are much broader than for example in *L. palustris*, especially the central one, which is narrower behind and terminates abruptly in front, without being continued as a fine pointed line between the 4 posterior eyes. The hairy clothing of this band is very scanty or altogether wanting. Most generally the legs are of a uniform olive- or rusty-yellow colour, with only inconsiderable dark spots above, towards the base; but sometimes they are pretty distinctly marked with dark rings. The femoral and patellar joints of the male's palpus are covered above with white hair, the tibial joint and the large, deep-black, shining lamina have only black hair.

(Pag. 486.) 8. *L. nigriceps* [= *Lycosa nigriceps* (THOR.) 1856].

See the preceding species, *L. saccigera* WESTR.

(Pag. 487.) 9. *L. monticola* [= *Lycosa monticola* (CLERCK) 1757].

Syn.: 1757. ARANEUS MONTICOLUS CLERCK, Sv. Spindl., p. 91, Pl. 4, tab. 5.

1833. LYCOSA MONTICOLA SUNDT., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 175 (ad part.).

?1837. " SACCIGERA WALCK., H. N. d. Ins. Apt. I, p. 327 (ad part.).

?1848. " (PARDOSA) MONTICOLA C. KOCH, Die Arachn., XV, p. 42, Tab. DXV, (ad part.) figg. 1446, 1448.

1856. " MONTICOLA THOR., Rec. crit. Aran., p. 50.

1870. " " L. KOCH, Die Arachn.-fauna Galiz., p. 42.

1871. " " CAMBR., Descr. of some Brit. Spid., cet., in Transact. of the Linn. Soc., XXVII, p. 398<sup>1)</sup>.

1) According to specimens with which I have been favoured by Mr CAMBRIDGE.

It would probably be utterly impossible accurately to separate most of the older writers' synonyms for this and the following species (*L. tarsalis* WESTR.), which seem to have been everywhere confounded with each other, until they were in Rec. crit. Ar. separated and characterized. The reasons, which lead to the conclusion, that the species here described by WESTRING ought to retain the specific name *monticola*, I have set forth loc. cit., p. 50; and that name has since been accepted by WESTRING, L. KOCH and CAMBRIDGE. Some synonyms from non-Swedish writers, which might have been taken up under this species, I have considered it best to place under *L. tarsalis* WESTR., which seems to be, at least in Germany and England, the more common of the two species. I have myself met with both as well in south as in north Germany. In Sweden both species seem in many places, for example in the vicinity of Göteborg, to be equally common; in others, as for instance here in Upland (CLERCK's place of residence) and in Gotland, *L. monticola* appears to be the more common; but in some places I have found *L. tarsalis* more plentiful. *L. monticola* is usually met with in dry and sunny localities (conf. CLERCK, loc. cit.), whereas *L. tarsalis* WESTR. frequents more grassy and damp places.

In order accurately to ascertain whither to refer *L. monticola* C. KOCH and *L. exigua* BLACKW., I sent specimens of both *L. monticola* WESTR. and *L. tarsalis* ID. to Dr L. KOCH and the Rev. O. P. CAMBRIDGE. The latter in *L. tarsalis* recognized *L. exigua* BLACKW., the former declared *L. tarsalis* to be identical with *L. monticola* C. KOCH. I have also received from CAMBRIDGE specimens of *L. tarsalis* under the name of *L. exigua* BLACKW., and Bavarian specimens of the same species from L. KOCH under the denomination of *L. monticola* C. KOCH. But both L. KOCH and CAMBRIDGE, on closer examination, have found *L. monticola* (CLERCK), WESTR. in their own collections confounded with *L. tarsalis*, and there can therefore hardly be a doubt, that both C. KOCH and BLACKWALL had seen the right *L. monticola*, although they overlooked the specific difference between it and *L. tarsalis*. Among C. KOCH's figures of his *L. monticola* loc. cit., figg. 1446 and 1448 probably represent *L. monticola* (CLERCK), WESTR. — *L. saccigera* WALCK., which in contradistinction to *L. monticola* WALCK. and *L. saccigera* WESTR. is stated to have annulated legs, we have already above treated (see preced. spec.).

The female of *L. monticola* (CLERCK) is easily distinguished from *L. palustris* (LINN.) or *tarsalis* THOR., as also from (*L. agricola*

and) *L. agrestis*, by the form of the vulva: this organ is smaller than in *L. palustris* and *L. agrestis*, very bright, almost plane, not deeply excavated longitudinally, but has merely a very shallow and broad, often scarcely perceptible, depression in the middle; the posterior angles have the form of small and projecting tubercles, and are not, as in *L. palustris*, broadly dilated and rounded off. The lateral bands on the cephalothorax are not always narrow and single, but frequently broader, and are then usually geminated by a more conspicuous longitudinal dark line; hence these lateral bands do not, as L. KOCH loc. cit. supposes, offer any sure mark for distinguishing between *L. monticola* and *L. palustris*. In the male the tarsi and metatarsi of the 1<sup>st</sup> pair are of exactly the same form as those of the succeeding pairs, not thickened. — *L. monticola* is closely allied to *L. cursoria* C. et L. KOCH<sup>1)</sup>, but in the latter the cephalothorax is, in both sexes, shorter than the tibia + patella of the 4<sup>th</sup> pair, whereas in *L. monticola* it is equal in length to the tibia + patella of that pair. *L. cursoria* is also usually darker and a little larger than *L. monticola*, and the female's vulva has its posterior angles somewhat bent forward and the central depression longer and deeper. From the males of *L. agricola* and *L. agrestis*, the males of *L. monticola*, *cursoria*, *palustris* etc., as also of *L. amnicola*, of which see above, p. 281, differ by all the tarsi being in these last-mentioned species of entirely uniform colour, yellowish. See L. KOCH, loc. cit., where a good account is given of the most important distinctive marks that characterize the species of the *L. monticola*-group.

In all the species belonging to the *L. monticola*-group, with which I am acquainted, except *L. hyperborea*, to which we shall return, when considering the next species, the male's bulbus genitalis has on the under side an appressed process, directed obliquely forward and outward, which has never the form of a regularly tapering, fine-pointed spine (such for instance as in *L. lugubris* and *L. nigriceps* among the species of C. KOCH's *Pardosa*, and in most species of his *Leimonina*), but is coarse, short and obliquely pointed, as in *L. monticola*, or else rounded or blunt at the extremity. As regards the form of the vulva in the different species that compose the *L. monticola*-group, vid. sup., p. 280, under *L. arenaria* WESTR.

Rather like *L. monticola* in colour and size is also *L. proxima* C. KOCH<sup>2)</sup>, of which I have a ♀ from Rome through the favour of

1) C. KOCH, Die Arachn., XV, p. 49, Tab. DXVI, fig. 1450; L. KOCH, Die Arachn.-fauna Galiz., p. 42.

2) Die Arachn., XV, p. 53, Tab. DXVII, figg. 1453, 1454.

Dr L. KOCH. In this, as in *L. monticola* ♀, the cephalothorax is equal in length to patella + tibia of the 4<sup>th</sup> pair, and its central band is equably narrowed forwards; but the narrow lateral bands are, in front, broken off in two places, and thus in this species form *patches*; the form of the vulva is so different, that this spider cannot be aggregated to the *L. monticola*-group. The vulva indeed consists of a little low, depressed area, which is elongated and very narrow in front, and widens rapidly behind, where it is terminated on either side by an almost semicircular, fine, raised border; throughout the whole area extends a septum, very narrow in front, but triangularly widened and slightly depressed behind. — The species is rather a *Leimonia* C. KOCH than a *Pardosa*, to which sub-genus it is referred by C. KOCH. *L. proxima* bears assuredly but little relationship to *Lyc. arenaria* SAV. et AUD. (Descr. de l'Égypte, 2<sup>e</sup> Éd., p. 367, Pl. IV, fig. 3) from the Desert near Rosetta in Egypt, under which species it is classed by SIMON (H. N. d. Araignées, p. 514).

GIEBEL (Zur Schweitzer. Spinnen-fauna, p. 440) has described, under the name of *Pardosa obscura*, a spider (from the Furka and La Flegère), which he considers to be most nearly allied to *L. monticola* in size and form; the upper part of the cephalothorax is stated to be of a deep blackish brown, without any markings.

(Pag. 490.) 10. *L. tarsalis* [= *Lycosa palustris* (LINN.) 1758]

- Syn.*: 1758. ARANEA PALUSTRIS LINN., Syst. Nat., Ed. 10, I, p. 623 (*salt. ad part.*).  
 ? 1782. „ SACCATA OLAFS., Reise igienn. Island, I, p. 609.  
 1802. „ AGILIS WALCK., Faune Par., II, p. 238 (*ad part.*).  
 1805. LYCOSA „ ID., Tabl. d. Aran., p. 13 (*ad part.*).  
 1833. „ MONTICOLA SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 175 (*ad part.*).  
 1834. „ PALUDOSA HAHN, Die Arachn., II, p. 14, Tab. XLII, fig. 105.  
 1836. „ EXIGUA BLACKW., Charact., cet., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 490 (*salt. ad part.*).  
 1837. „ SACCIGERA WALCK., H. N. d. Ins. Apt., I, p. 327 (*ad part.*).  
 1848. „ (PARDOSA) MONTICOLA C. KOCH, Die Arachn., XV, p. 42, (*salt. ad part.*.) Tab. DXV, fig. 1447, Tab. DXVI, fig. 1449.  
 1856. „ TARSALIS THOR., Rec. crit. Aran., p. 53.  
 1856. „ SACCIGERA ID., ibid., p. 55 (*ad part.*: ♀)  
 1861. „ EXIGUA BLACKW., Spid. of Gr. Brit., I, p. 29, Pl. II, fig. 12 (*salt. ad part.*).

1867. *PARDOSA MONTICOLA* OHL., Aran. d. Prov. Preuss., p. 136.

1870. *LYCOSA TARSALIS* L. KOCH, Die Arachn.-fauna Galiz., p. 41, 42.

Under the denomination of *Aran. palustris*, LINNÆUS has in his later works confounded at least two different species of spiders. In the 2<sup>nd</sup> Ed. of his *Fauna Suecica* (1761) p. 491 he cites, under "*Ar. palustris*", from his previous works two descriptions, which evidently belong to two totally different animals. The one is that taken up 1742 in his "*Animalia per Sueciam observata*", under n:o 9: *Ara-neæ nigra, pectore abdomineque linea alba cinctis*<sup>1)</sup>, which is probably identical with *Dolomedes fimbriatus* (CLERCK); the other is the spider described in *Fauna Suec.*, Ed. 1, p. 352 under n:o 1219: *Ara-neæ nigra, thorace triplici linea longitudinali alba, abdomine nebuloso*, which is without doubt identical with *L. tarsalis*; for it is evident from LINNÆUS' statement: "*habitat in paludibus exsiccatis frequens apud nos*", which does not suit *L. monticola* (CLERCK), that it cannot refer to this last mentioned species, as I in *Rec. cit. Aran.* (p. 51, 92) erroneously had supposed. In the *Syst. Nat.*, Ed. 10 (1758) — the work in which LINNÆUS for the first time applies "nomina trivialia" or specific names to Spiders and to the Animal Kingdom in general — nothing more appears about "*Ar. palustris*" than the diagnosis: "*Ar. abdomine oblongo nebuloso: lineis lateralibus albis*", and the statement: "*habitat in paludibus exsiccatis cæspitosis*," together with the citation: "*Faun. Suec. 1219*", i. e. *Lyc. tarsalis*. LINNÆUS does not here cite his *Anim. per Suec. observ.* ("*Act. Ups.*") n:o 9, and he has accordingly not definitively expressed the opinion, that this latter species was the same as that described in the *Fauna Suec.*, although the words of the diagnosis seem to indicate that he inclined to that erroneous opinion. It was in the 2<sup>nd</sup> Edit. of *Fauna Suec.*, 1761 (where the diagnosis is the same as in *Syst. Nat.*, Ed. 10) that he for the first time, as has been already mentioned, took the two species before us to be synonymous; but that it is the spider described in *Fauna Suec.*, Ed. 1: "*Ar. nigra, thorace triplici linea longitudinali alba*", or *Lyc. tarsalis*, that he means, is evident from the description repeated from Ed. 1., where we find: "*Neque FRISCHIVS loc. cit.*<sup>2)</sup>, neque LISTERUS de Araneis Lupis globiferis, p. 77,

1) In *Acta Literaria et Scientiarum Sueciæ*, Vol. IV, continens annos 1735 — 1739 ("*Act. Ups. 1736*", as LINNÆUS himself writes), p. 38.

2) *Beschreib. allerley Insekten in Teutsch Land*, 8, p. 3, Tab. II. — What spider FRISCH intended, it is not possible to determine with certainty; to me it seems

n. 25, 26, 27, 28, in ulla specie meminit thoracem utrinque linea alba longitudinali notari, nec tertiam albam lineam longitudinalem thoracis a medio dorsi. Hinc de synonymis hæreo. Thorax in aliis niger. [This expression seems to indicate, that LINNÆUS here confounded some other species with the real *Ar. palustris*.] Abdomen nigrum, maculis nigerrimis quasi nebulosum." — In the 12<sup>th</sup> Edition of Systema Naturæ, I, P. II, p. 1036 (1767), he has again excluded the citation from "Act. Ups." (*Dol. fimbriatus*?): here we have the same statement about *Ar. palustris* as in the 10<sup>th</sup> Ed., with however the addition: "*Affinis A. saccata*," and a citation from the 2<sup>nd</sup> instead of the 1<sup>st</sup> Ed. of Fauna Suec. — As LINNÆUS then in his Syst. Nat., Ed. 10, where the name *Ar. palustris* first occurs, and from which the priority ought to be reckoned, understood evidently, as may be seen from his citation, by that name *Lyc. tarsalis* (even though he may have confounded some other, it cannot be determined which, species with it), and only some time afterwards united *Dolom. fimbriatus* (?) with this spider, I conceive that we cannot do otherwise than accept the Linnean specific name *palustris* for *Lyc. tarsalis*. — C. KOCH cites *Ar. palustris* LINN. under his *Potamia piratica* (Die Arachn., XV, p. 1), which appears to me quite gratuitous. *Ar. palustris* FABR. on the other hand does, as C. KOCH assumes, belong to his *P. piratica*.

*Aran. palustris* MÜLL. (Faun. Ins. Fridrichsd., p. 94), and *Ar. palustris* SCHRANCK (Fauna Boica, III, 1, p. 235), under which not only *Ar. palustris* LINN. and *Ar. saccata* OLAFS. <sup>1)</sup>, but also *Ar. Listeri* SCOP. <sup>2)</sup>, which appears to be a *Tarentula*, and GEOFFROY'S "*Araignée porte-feuille*" are quoted, certainly do not belong to this species, but ought probably rather to be referred to *Dolom. fimbriatus* (CLERCK).

*Ar. dorsalis* FABR., which SCHRANCK cites under his *Ar. dorsalis* and C. KOCH under his *Lyc. monticola*, probably does not belong to this species, but to *Lyc. lugubris* WALCK. Vid. sup., p. 277, under *L. silvicola* WESTR. On the other hand I am, like C. KOCH, fully

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probable that it may have been a *Tarantula* or *Trochosa* (*Tr. terricola* THOR.?), judging from the alleged size and from the position of the eyes, as also because the cocoon is stated to be "spherical, white." LINNÆUS mentions this spider not only under his *Ar. palustris*, but also under his *Ar. saccata*.

1) OLAFSEN'S "*Aranea nigra* (*Saccata*), thorace 3 lineis albis longitudinalibus ductis notata. Faun. Suec. 1219, Knoda-Kongulo, on the grass-fields" (Reise igienn. Isl., I, p. 609), is probably = *Lyc. palustris* (LINN.), NOB.

2) Ent. Carn., p. 397.



convinced that WALCKENAER'S *Ar. agilis* includes this and perhaps some other species of the *L. monticola*-group, although WALCKENAER in Faune Franç. (and in his H. N. d. Ins. Apt., I, p. 318) appears to have transferred that name to another larger (5 lines long) species. This seems to me so much the more probable, as he has neither in his Faune Parisienne nor in Faune Franç. taken up the "*L. monticola*" and "*L. saccigera*" described in H. N. d. Ins. Apt., the last-named of which is certainly, at least *ad partem*, identical with *L. tarsalis* or *palustris*. Of the synonyms adduced by him under *L. saccigera* (and *L. agilis*), SUNDEVALL'S *L. monticola*, and that merely *ad partem*, is however the only one which belongs to *L. tarsalis* or *palustris*. — SORDELLI<sup>1)</sup> takes up *L. agilis* WALCK. as synonymous with *L. cursoria* C. KOCH, which is probably not true of the *L. agilis* described in H. N. d. Ins. Apt., even if *L. cursoria* should be included in the *Ar. agilis* of the Faune Parisienne.

*Lycosa paludosa* HAHN also certainly belongs to *L. tarsalis* (*palustris*); at least the description of the lateral bands on the cephalothorax and of the places it inhabits ("marshy localities") suit *L. tarsalis* better than *L. monticola*, which perhaps the figure more resembles. C. KOCH (loc. cit., p. 48) considers *L. paludosa* HAHN to be the same as *L. pullata* (CLERCK), which is negated not only by HAHN'S figure, but also by his description. WALCKENAER takes it up as a synonym to his *L. sollers*, which appears to me to be a separate, to me unknown species. At any rate the name *paludosa* is wrong, for *paludosus* means "marshy", and would require, if it could be used, to be corrected either into *palustris*, in which case it would coincide with the Linnean name of the species, or to *paludicola* (just as LATREILLE changed WALCKENAER'S *Club. lapidosa* into *Club. lapidicola*), in which case it comes into collision with the name *paludicola* already given by CLERCK to another *Lycosa*.

Concerning *L. saccigera* WALCK. and *L. saccigera* THOR., vid. supr., p. 284 under *L. saccigera* WESTR. As regards *L. monticola* C. KOCH and *L. exigua* BLACKW., see the preceding article, *L. monticola* WESTR. — The figures of this species in Spid. of Gr. Brit. are utterly irrecoznizable.

I have received from OHLERT numerous examples of his *Paradosa monticola*; they all belong to *L. tarsalis* or *palustris*.

1) Sui Ragni Lombardi (in Atti della Soc. Ital. d. Scienze Nat., XI, fasc. III), p. 16.

*L. palustris* (LINN.) appears to be one of the commonest species met with in Europe. From Italy it is distributed over all central and northern Europe, over the whole of Scandinavia, even up to Lappland, where it was perhaps found already by LINNÆUS himself<sup>1)</sup>, and in the Finnmark.

The males of *L. palustris* and *L. herbigrada* differ from all species known to me in the form of the metatarsi and tarsi of the 1<sup>st</sup> pair, which are somewhat thickened and clothed at the sides with longer and more projecting hairs, in *L. herbigrada* perhaps a little less distinctly than in *L. palustris*; the females of both species are distinguished by a form of the vulva peculiar to themselves: see above under *L. albo-limbata* WESTR., where also the chief differences between *L. palustris* and *L. herbigrada* are pointed out. The lateral bands of the cephalothorax in *L. palustris* are broader than in *L. monticola*, generally, but not always, geminated by a more or less distinct dark line; the central band is long and narrow, tapering equably in front, seldom exhibiting a slight increase of breadth behind the posterior eyes. The male's palpi are not exclusively black-haired; at least in my Swedish specimens the patellar joint on the inner side, and the femoral joint at the extremity of the upper side and on the inner side are also somewhat white-haired<sup>2)</sup>. — To *L. palustris*, *L. saltuaria* L. KOCH (loc. cit., p. 41) is closely akin; the male of this species is as yet unknown, but the female is easily distinguished from *L. palustris* ♀ by the vulva, which is smaller, lower, rounded behind, with the posterior corners curved forward.

To the *L. monticola*-group, and perhaps to *L. palustris*, we may probably refer *L. æronauta* CONT.<sup>3)</sup>; and to the same group we may

1) "Here [in Luleå Lappmark, near Storbacken] was the black biting spider (*Ar. palustris*) but not the *littoralis* (*A. riparia*)." LINN., *Lachesis Lapponica*, I, p. 258. — It may however be questioned, whether LINNÆUS by *Ar. palustris* here meant the same spider, that he had described in *Faun. Suec.*, Ed. 1, and which he in *Syst. Nat.*, Ed. 10 calls *Ar. palustris*.

2) Dr KOCH informs me by letter, that the expression "durchaus schwarz behaart" in his description of the femoral and patellar joints of the palpus in *L. tarsalis* ♂ (*Arachn.-Fauna Galiz.*, p. 42) is only a lapsus calami for: "nicht durchaus weiss behaart" (in contradistinction from *L. cursoria* ♂).

3) *Lycosa æronauta* CONT. 1847: "L. nigra abdomine ovato-oblongo, in medio macula ferrugineo-atra serratim maculata notato, subtus flavo. Pedibus ferrugineo-atro-maculatis. Long. lin. 4." CONTARINI, *Sul volo dei Ragni e sopra una nuova specie di Ragno volatore*, in *Atti d. Ist. Veneto*, VI, p. 441 (according to an obliging communication from Count NINNI, of Venice).

perhaps aggregate a new species from the most northerly parts of Scandinavia, which I call *L. hyperborea* 1). This species is in near relationship with *L. palustris*, but is easily distinguished by its entirely different organs of copulation.

1) *L. hyperborea* N. Ferrugineo-fusca, pedibus testaceis, cephalothorace lineis tribus longitudinalibus flavo-testaceis, albido-pilosis: media sub-æquali, angusta, inter oculos 4 posticos procurenti, lateralibus latis, continuis; abdomine antice macula lanceolata flavo-testacea, albicanti-pilosa, fusco-marginata, ordinibusque postice duabus appropinquantibus macularum flavo-testacearum; metatarsis anticis in ♂ non incrassatis neque plumato-pilosis, bulbo genitali subter spina sive procurso obliquo carenti; area vulvæ antice foveâ magnâ excavata, postice dilatata et sub-plana, angulis rotundatis. — Long. ♂  $4\frac{1}{2}$ — $5\frac{3}{4}$  millim.; ♀  $4\frac{1}{2}$ —7 millim.

*Femina.* Cephalothoracis long.  $2\frac{3}{4}$ , lat. ejus fere 2, long. pedum 4:ti paris  $10\frac{1}{2}$  millim.; patella cum tibia 4:ti paris paullo plus 3 millim., tibia ejusdem paris  $2\frac{1}{3}$  millim. Cephalothorax ferrugineo-fuscus, area oculorum plus minus late nigricanti; supra vittis tribus longitudinalibus testaceis albicanti-pilosis notatus, lateralibus latis, plerumque linea fusca geminatis, media angusta, antice inter oculos 4 posticos procurenti; sternum clarius vel fuscus testaceum, versus margines obscurius. Oculi 4 anteriores in seriem paullo procurvam ordinati; medii eorum paullulo tantum majores quam laterales, et inter se magis quam ab his distantes. Mandibulæ testaceæ, apice interdum fuscae. Maxillæ et labium testacea. Palpi testacei. Pedes ferrugineo- vel olivaceo-testacei, plerumque immaculati. Abdomen ferrugineo-fuscum, antice linea media lanceolata longiore, flavo-testacea, albicanti-pilosa, plus minus distincte fusco-marginata, postice vero versus medium dorsi serie utrinque ex maculis testaceis formata notatum, quæ series, versus anum coeuntes, antice apicem posticum acuminatum lineæ illius inter se excipiunt. Series punctorum nigricantium utrinque interdum quoque adest. Venter albicanti-pilosus. Vulva parva, ferruginea, antice rotundata, postice angulis late et æqualiter rotundatis dilatata ibique non transverse convexa, sed plana; lateribus igitur non rectis sed emarginato-curvatis; pars ejus antica angustior foveâ amplissimâ excavata est, pars postica ad angulos rotundatos utrinque sat late sed leviter tantum impressa.

*Mas.* Color ut in ♀ omnino; palpi ferrugineo-testacei, non albo-pilosi, lamina anguste ovata paullo obscuriore. Bulbus subter ad basin inflato; hæc pars inflata, a latere visa, in procursum crassum, sub-conicum, anteriora versus directum producta videtur (ut in *L. monticola*, cet.); ad latus ejus exterius dens parvus adest, sed spina illa crassa obtusa, in *L. monticola* ceterisque ante hanc partem basalem sita, anteriora versus et foras directa, visuque facillima, in *L. hyperborea* (ut in *L. annulata*: vid. p. 300) omnino deest.

Var. *β, pusilla*. Paullo minor, cephalothorace  $2\frac{1}{4}$  millim. longo, pedibus palpisque distincte fusco-maculati -annulatique, vitta media cephalothoracis latiore, non gradatim anteriora versus, sed apice antico breviter tantum acuminata. Vix propria species.

Differt igitur femina a *L. palustris* ♀, cui simillima est, in primis formâ vulvæ; hæc enim in *L. palustri* postice non plana est, sed transverse convexa, et

(Pag. 493.) 11. **L. lignaria** [= *Lycosa lignaria* (CLERCK) 1757].

- Syn.: 1757. ARANEUS LIGNARIUS CLERCK, Sv. Spindl., p. 90, Pl. 4, tab. 4.  
 1833. LYCOSA LIGNARIUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.  
 f. 1832, p. 174.  
 1856. „ LIGNARIA THOR., Rec. crit. Aran., p. 47, 48.

This large and handsome species, which is evidently a *Leimonia* C. KOCH, and is easily distinguished from all other Swedish *Lycosæ* by its black and white speckled body and by its long legs, thickly annulated in white and black, is rather nearly allied to *L. blanda* C. KOCH (Die Arachn., XV, p. 21, Tab. DX, figg. 1428—1430), to which I had erroneously referred it loc. cit. (though with an interrogation). C. KOCH's fig. 1429, with the middle band on the cephalothorax broad at its anterior extremity, but much narrowed in front of the central furrow, bears indeed a close resemblance to the ordinary specimens of *L. lignaria*. The lateral bands are however in *L. lignaria* not continuous, but (always?) resolved into spots; the central band usually exhibits, immediately in front of the contracted part, two black spots, and is at the anterior extremity produced into three more or less distinct points. I cannot recollect having seen any specimens of *L. lignaria*, where the central band of the cephalothorax has been spindle-formed, tapering equably forwards, as in C. KOCH's figg. 1428 and 1430 of *L. blanda*. In large individuals the tibia + patella of the 4<sup>th</sup> pair is 5, the cephalothorax 4 millim. long. — *L. blanda* is said to be met with in pine-woods, as is also the case with *L. lignaria*; but I have never seen this latter species in damp, but in dry, sunny localities.

*L. lignaria* is distinguished from most hitherto known *Lycosæ* by having on the under side of the tibiæ of the anterior legs four pairs of long spines, independently of the shorter pair at the extremity. The male's bulbus genitalis is (as in *L. septentrionalis*) distinguished by the absence of the ordinary spine directed obliquely for-

secundum totam fere longitudinem impressione postice sub-dilatâ excavata, angulis posticis dilatatis sub-deflexis, et deplanatis quidem, sed vix impressis. Mas defectu spinæ ordinariæ subter in bulbo, ut et metatarsis anticis non incrassatis a ♂ *L. palustris* ceterorumque facile distiguitur. Var. β differt quoque forma vittæ cephalothoracis paullo aliter conformatæ, saltem interdum.

Exempla duo utriusque sexus ex Enare Lapponiæ mecum communicavit Cel. AL. v. NORDMANN. — Feminas duas varietatis β vidi, alteram in Herjeådalén Sueciæ inventam, alteram ad Valdres Norvegiæ a Cel. G. EISEN captam.

ward and outward. The base of the bulbus is turgid, and that turgescence exhibits on the under side, in front, a coarse tooth cloven in two. Immediately in front of the turgid part a narrow, low ridge extends transversely over the whole bulbus, and immediately before the outer extremity of that ridge may be perceived a slender blunt tooth pointing downwards. The apex of the bulbus has on the under side a small sharp tooth, or is, as SUNDEVALL expresses himself, "apice extus bidentatus vel sub-calcaratus" ("articulo tibiali" is, as WESTRING has remarked, a slip of the pen for "articulo genitali"). So at least in the only fullgrown (dried) male specimen in my cabinet. The vulva consists of an oblong area broader behind, which is divided by a transverse depression into two parts, the anterior of which is longitudinally hollowed out into a narrow excavation with raised edges, and two low, narrow, almost parallel, longitudinal ridges at the bottom; the posterior is broad and high, and divided by two longitudinal depressions into three large rounded tubercles, scarcely longer than they are broad.

In *L. blanda* C. KOCH on the contrary the genital bulb of the male is on the under side armed with a very long spine directed outwards and somewhat forwards; this spine is curved somewhat backwards, and, towards the extremity, also upwards; seen from the under side, where it is flattened and slightly broader about the middle, it is rather obtuse at the apex, but viewed in profile, it is thick at the base and regularly tapering to a point; seen in profile, the bulbus exhibits at the outer margin a downward directed tooth. The vulva consists of a large, depressed area or fovea, which is rather acutangular in front, gradually dilating towards the middle, and then slightly narrowed towards the broad, truncated extremity; it is divided into two by a broad, coarse septum pointed in front. In both sexes the anterior tibiæ have on the under side only two or perhaps sometimes three pairs of long appressed spines, besides the two shorter spines at the apex. — Dr L. KOCH has kindly communicated to me one male and two female specimens of *L. blanda*. The nearest relations to this species appear to be *L. septentrionalis* WESTR. and *L. lapponica* THOR., especially the latter, from which it is however distinguished by its distinctly annulated legs and some slight differences in the organs of copulation: see above p. 273.

*Ar. lignarius* CLERCK and *Lyc. lignarius* SUND. are by C. KOCH quite erroneously referred to *L. pullata* (CLERCK.) By WALCKENAE the

same names are taken up as synonyms to his *L. sollers* (Ins. Apt., I, p. 319). which is most assuredly quite a different species.

Closely allied to, if not identical with *L. lignaria*, is *L. borealis* SUND. (loc. cit., p. 180), erroneously aggregated by WALCKENAER to his *L. lugubris* (Ins. Apt., I, p. 329). WESTRING does not consider this species to be different from *L. lignaria*, and he is perhaps right in this: nevertheless it appears to me best to let it remain for the present as a separate species, as it is described as follows: "fusco-testacea . . .; annuli pedum et palporum . . . cinereo-albi . . . spatiiis latioribus, saturate fusco-testaceis discreti . . . Thorax et mandibulæ fusco-testacei," which does not well suit *L. lignaria*. In northern Scandinavia there may probably exist several species with more than four pairs of spines under the fore tibiæ. Such a species from Valdres in Norway, which I call *L. norvegica*, I have received from Mr G. EISEN; I have also another from the Bavarian Alps, given me by Count KEYSERLING, and which may be called *L. longipes*<sup>1)</sup>.

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1) *Lycosa norvegica* N. nigricans, cephalothorace vitta media postice saltem cinereo-pilosa, serieque utrinque ad marginem macularum cinerearum notato; pedibus luteo-fuscis, nigro-annulatis, tibiis anterioribus subter paribus 5 aculeorum armatis; abdominis dorso antice macula sub-hastata et postice serie punctorum albicantium utrinque picto, hac pictura plus minus distincta. — ♀ ad., long. c:a 8—9 millim.

Cephalothorax 4 millim. longus, paullo plus 3 millim. latus, multo brevior quam patella cum tibia 4:ti paris, parte cephalica convexa, postice sensim declivi parte thoracica humiliore; fusco-nigricans, cinerascenti-pilosus, vitta media paullo clariore, postice saltem cinerascenti-pilosa, vittaque utrinque supra marginem paullo clariore, ex maculis cinereo-pilosis plus minus confluentibus formata, his vittis omnibus parum expressis. Sternum nigrum, cinereo-pilosum. Mandibulæ fuscae vel nigræ. Maxillæ et labium obscure luteo-fusca. Palpi luteo-fusci; partes femoralis et tibialis annulis basali et medio nigris, hoc in parte tibiali supra abrupto, partes patellaris et tarsalis annulo nigro, patellaris apice quoque nigricans. Pedes luteo-fusci, coxæ subter clariore; femora internodiis sequentibus obscuriora, annulis 3 (in pedibus posterioribus 4) minus distinctis nigris; tibiæ et metatarsi 3 annulos nigros integros habent, patellæ 1; tarsi apice nigri. Interstitia clariora palporum et pedum inter annulos nigros pilis cinerascentibus vestita sunt (minus dense, ut videtur, quam in *L. lignaria*). Pedes 1:mi paris 14, 4:ti paris 18 millim. longi, ideoque cephalothorace 4:plo et dimidio longiores; patella + tibia 4:ti paris 5½ millim.; tibiæ 4 anteriores, præter aculeos 2 breviores ad apicem, 4 paria aculeorum longorum subter habent. Abdomen cinereo-nigricans, supra ad basin area sub-hastata, in latere utrinque sub-dentata, maculis vel lineis albicantibus limitata, plus minus expressa, fere ut in *L. lignaria*; posterius in dorso adsunt vittæ duæ nigriores, versus anum appropinquantes, sua quæque serie punctorum albican-

(Pag. 495.) 12. *L. borealis* [= *Lycosa borealis* SUND. 1833]

Syn.: 1833. *LYCOSA BOREALIS* SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 180.

Concerning this spider, of which only one specimen, a female found in Lappland and described by SUNDEVALL, has been met with, and which neither have I, nor has WESTRING, seen, vid. preced. species, *L. lignaria* WESTR.

tium notatæ. Venter pilis testaceo-cinereis dense vestitum. Vulva ex area magna oblonga, impressa, forma fere lagenæ, constat: ex duabus partibus æque fere longis composita est, pars anterior angustior antice rotundata et profunde impressa, postice vero altior et sulcis longitudinalibus duabus notata; pars posterior profundior, latior. in lateribus antice fere circulariter rotundata, marginibus postice, ad rimam genitalem, incrassatis, et septo valde angusto, æquali in duas divisa; utrinque ad apicem posticum hujus septi costa sinuata fere S-formi usque ad rimam genitalem sese extendit. — ♂ ignotus.

A *L. lignaria*, cui hæc species simillima est, colore obscuriore et minus læte albido-variato, pedibus minus expresse annulatis, præsertim vero parte vulvæ posteriore omnino aliter conformata sine negotio distingui potest. — *L. nigra* C. KOCH — de qua vid. infra in *L. longipede* — sat similis quoque est; hæc tamen subter in tibiis anterioribus 4 paria aculeorum tantum et vulvam omnino aliter constructam habet.

Tria specimina feminea adulta, ad Valdres Norvegiæ, 4,000 pedes supra mare inventa, in spiritu vini asservata, possideo.

*L. longipes* N. tota nigra, cinereo- et nigro-pilosa, pedibus nigro-piceis non annulatis, tibiis 1:mi paris subter paribus 7 aculeorum armatis, bulbo genitali inermi. — ♂ ad. Long. c. 8½ millim.

Cephalothorax 4¼ millim. longus. 3¾ latus, parte cephalica sat alta, parte thoracica eâ humiliore; niger totus, sub-cinereus, pilis sub-cinereis brevioribus vestitus et pilis valde longis nigris sat dense sparsus. Oculi 4 anteriores æquales et inter se æque longe distantes. Palpi nigri, parte tibiali duplo longiore quam latiore, versus apicem parum latiore, sub-cylindrata. Bulbus subter in basi inflata dentem brevem et crassum, parum manifestum habet; costa angusta fusca transverse foras et retro per totam bulbi latitudinem extensa est; aculeus vero liber nullus in bulbo adest. Palpi et pedes nigro-picei, non annulati, macula vel linea sub-testacea hic illic manifesta, coxis subter ad basin anguste ferrugineis. Pedes tenuiter cinereo-pubescentes, præsertim subter, et pilis longis, patentibus, fuscis præterea sat dense vestiti; 1:mi paris 15½ millim. longi, 4:ti paris 19½, patella + tibia hujus paris 5½ millim.; tibiæ 1:mi paris subter paribus 6 aculeorum longiorum et præterea pari 7:mo ad apicem, breviores, armatæ sunt; in tibiis secundi paris aculei subter 6 tantum paria formant. In ♂ juniore (long. cephaloth. 3¾, patellæ + tibiæ 4:ti paris 4¼ millim.) abdomen nigrum vestigia lineæ vel maculæ clarioris antice in dorso ostendit; in vivis forsitan puncta clariora quoque postice in dorso adsunt; in mare adulto unico a me viso abdomen nigrum est,

(Pag. 496.) 13. **L. amentata** [= *Lycosa amentata* (CLERCK) 1757].

Syn.: 1757. ARANEUS AMENTATUS CLERCK, Sv. Spindl., p. 96, Pl. 4, tab. 8 (salt. ad part.: fig. 2).

?1757. " FUMIGATUS ID., ibid., p. 104, Pl. 5, tab. 6.

1758. ARANEA SACCATA LINN., Syst. Nat., Ed. 10, I, p. 623 (salt. ad part.).

?1763. " LYONETTI SCOP., Ent. Carn., p. 403.

1778. " LITTORALIS DE GEER, Mém., VII, p. 274, Pl. 15, figg. 17—24.

1789. " AMENTATA OLIV., Encycl. Méth., IV, p. 218.

1823. LYCOSA SACCATA SUND., Gen. Aran. Suec., p. 21 (salt. ad part.).

1829. " " HAHN, Monogr. Aran., 5, Pl. 1, fig. C.

1831. " " ID., Die Arachn., I, p. 108, Tab. XXVII, fig. 81.

1833. " AMENTATA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 177 (salt. ad part.).

1834. " PALUDICOLA C. KOCH, in HERR.-SCHEFF., Deutschl. Ins., 123, 32 (sec. KOCH, Die Arachn.)

1848. " (LEIMONIA) PALUDICOLA ID., Die Arachn., XV, p. 10, Tab. DVII, figg. 1421—1422.

1856. " AMENTATA THOR., Rec. crit. Aran., p. 60.

1856. " FUMIGATA ID., ibid., p. 65.

1861. " SACCATA BLACKW., Spid. of Gr. Brit., I, p. 26, Pl. II, fig. 9.

1867. LEIMONIA PALUDICOLA OHL., Aran. d. Prov. Preuss., p. 133.

That CLERCK's *Aran. amentatus* and LINNÆUS' *Ar. saccata* chiefly, if not exclusively, refer to the spider before us, which is perhaps

immaculatum, pilis nigro-cinereis brevioribus vestitum et pilis longis nigris præterea dense sparsum; venter pilis obscure cinereo-testaceis tectus. — ♀ ignota.

Marem adultum et alterum juniorem (in Alpibus Baviaræ 8—9000 pedes supra mare captos), a Cel. Com. E. KEYSERLING dono mihi datos, possideo. Fortasse cum *L. nigra* C. KOCH (Die Arachn., XV, p. 13, Tab. DVIII, figg. 1423, 1424) interdum confusa fuit hæc species; sed paullo major est, et pedibus longioribus, obscurioribus et non annulatis, tibiis anterioribus subter paribus aculeorum 7 vel 6, præsertim vero formâ partium copulationis optime distincta. In *L. nigra*, quæ paria aculeorum 4 tantum subter in tibiis anterioribus habet, vulva impressionem format longam et angustam, circa medium dilatatam, tum vero (postice) paullatim angustatam et acuminatam, septo longo, postice tenuiter acuminato, lanceolato vel sub-rhomboidi in parte dilatata instructam, quod septum antice quidem in lineam tenuem producit, postice vero non usque ad rimam genitalem pertinet, ubi margines vulvæ sese fere tangunt, sulco tantum angusto et profundo sejuncti. Bulbus genitalis maris in basi inflata dentem valde magnum, in duas lacinias acuminatas fissum ostendit; versus apicem bulbus sub-testaceus est, et hic in latere superiore dentem minutum ostendit; in latere inferiore, versus apicem, bulbus aculeum testaceum, fortem, acuminatum, compressum, curvatum, foras et retro directum habet. — Marem et feminam adultos *L. nigra* ex Tirolia Cel. Dr L. KOCH benigne mecum communicavit; feminam quoque ex Salisburgo possideo, a Cel. Dr L. REDTENBACHER dono mihi datam.



the commonest *Lycosa*-species in Sweden, appears to me fully certain: Conf. Rec. crit. Ar., p. 60 and 92. The *Ar. saccata* of most of the other, older writers on the other hand cannot be with certainty identified with this spider: "unusquisque hoc nomen speciei generis *Lycosæ* suæ regionis præ ceteris frequenti addidisse videtur, quare plures species diversas verisimiliter comprehendit," says SUNDEVALL (1833, loc. cit.), and in this he is undoubtedly right. To discover in detail which and how many species have been mixed together under the name of *Ar.* or *Lyc. saccata*, would probably be impossible. A quite peculiar, considerably smaller species ("♂  $2\frac{1}{3}$ , ♀  $2\frac{3}{4}$ , Lin." C. KOCH) is however *L. saccata* C. KOCH (Die Arachn., XV, p. 51, Tab. DXVII, figg. 1451, 1452), under which *Ar. saccata* LINN. and *Ar. amentatus* CLERCK are erroneously cited; this species, which WESTRING (as also I in Rec. cit.) supposed to be the same as *L. arenaria* C. KOCH (*L. agricola* THOR.), and which BLACKWALL takes up under his *L. saccata* = *L. amentata*, has not yet been met with in Sweden, and cannot therefore retain the Linnean specific name, wherefore I propose to call it *L. hortensis*. I have myself found a female of it in Pyrmont, and have received a ♂ and a ♀ from Nuremberg from L. KOCH. Extremely nearly allied to this *L. hortensis* both in size and colour, and perhaps only to be distinguished by its somewhat different organs of copulation (of which see below), is a little *Lycosa*, which I have captured at Nice and at Rome, and which I call *L. annulata*<sup>1)</sup>. I have also from SIMON received French specimens of

1) *L. annulata* N. — *Femina*. Cephalothorax c:a  $2\frac{4}{5}$  millim. longus, paullo plus 2 millim. latus, brevior quam patella + tibia 4:ti paris, olivaceo-fuscus, pilis olivaceo-flaventibus tectus, vittis tribus sub-testaceis longitudinalibus notatus: vitta media sat lata, sulco ordinario fusco geminata, postice acuminata, antice quoque ante sulcum illum repente angustata et aut formâ lineæ angustæ versus aream ocalorum procurrenti, aut pone oculos posticos iterum dilatata; vitta laterali supra marginem utrinque in maculas plus minus distinctas divulsa. Partes oris testaceæ, nigro-sub-maculatæ. Sternum fuscum, albicanti-pilosum. Palpi et pedes olivaceo-testacei, fusco-annulati et -maculati: femorum annuli 4, patellarum saltem 1, tibiarum 3 vel (in ped. saltem 4:ti paris) 4, metatarsorum 3 parum distinctis, tarsis versus apicem sub-infuscat; annulis plerisque in maculas plus minus divulsis. Pedes 1:mi paris c:a  $7\frac{3}{4}$ , 4:ti paris  $11\frac{1}{2}$  millim. longi ideoque cephalothorace 4:plo longiores (tibia  $2\frac{1}{3}$ , patella + tibia hujus paris  $3\frac{1}{4}$  millim.); tibiæ anticæ subter paribus aculeorum 3 longorum et appressorum ibique præterea in apice pari 4:to brevior armatæ. Abdomen fuscum, pilis olivaceo-testaceis tectum et sub-variatur: linea media antica clariore, et serie macularum utrinque clariorum, his in lineas paucas transversas angulatas plus minus distincte binis plerumque conjunctis. Venter pilis olivaceo-cinereis tectus. Vulva aream oblongam

it from the neighbourhood of Paris, under the name "*Lyc. saccata* WALCK." It is indeed probably identical with WALCKENAER'S *L. saccata*, which is stated to be only 3 lines long, although WALCKENAER may possibly have known and have confounded with it *L. saccata* C. KOCH or *L. hortensis* N., and perhaps also the true *Ar. saccata* LINN. or *L. amentata* (CLERCK), WESTR.

*Ar. saccata* OLAFS. (Reise igienn. Isl. p. 670) appears to be the same as *L. tarsalis* WESTR. or *L. palustris* (LINN.), N.; see above p. 290. *Ar. saccata* O. FABR. (Fauna Grønland., p. 228) is an entirely different and considerably larger species, probably not met with in Europe. *Ar. palustris* MÜLL., "abdomine oblongo nebuloso; lineis lateralibus albis" (Faun. Ins. Fridrichd., p. 94), which is found "in paludibus exsiccatis", and under which *Ar. paludicola* CLERCK (but not *Ar. palustris* LINN.) is cited, cannot well belong to *L. amentata*, to which is it referred by C. KOCH, nor yet to *L. palustris* LINN.; it appears to me rather to be a young *Dol. fimbriatus*.

*L. fumigata* THOR., loc. cit., which is probably the same as *Ar. fumigatus* CLERCK, is only a very dark variety of *L. amentata*. That *Ar. fumigata* LINN. belongs to this species, is on the other hand hardly probable; it is more likely that it is identical with *L. paludicola* (CLERCK).

postice latiore occupat: antice adest fovea magna, postice aperta, rotundata vel sub-quadrangula; ab hac fovea ad rimam genitalem ducta est costa longitudinalis postera versus gradatim dilatata et sulco medio longitudinali notata; utrinque ad extremitatem posticam costæ adest fovea et tum tuberculum; pars antica costæ ut septum foveam illam in duas dividit.

*Mas* ad colorem cephalothoracis et abdominis cum femina convenit, vittis cephalothoracis lateralibus tamen minus distinctis. Pedum annuli saltem in femoribus supra valde distincti, in sequentibus internodiis interdum magis obsoleti. Palporum partes femoralis et patellaris testaceæ, nigricanti-sub-maculatæ, parcius nigro-pilosæ; pars tibialis fusca, pilis longis et densis atris vestita; lamina quoque nigra, atro- et nigro-pilosa. Bulbus nigro-fuscus, basi subter modice inflatus; *spina ordinaria obliqua deest, et tuberculo vel dente parvo nigro tantum representatur.*

Patria: Gallia et Italia.

1) SCHIÖDTE, Udsigt over Grønlands Land-, Ferskvands- og Strandbreds-Arthrop., in RINK, Grønland etc.: Naturhist. Tillæg, p. 71; Cfr. THOR., Om Arachn. fr. Spetsbergen o. Beeren Eiland, in Öfvers. af Vet.-Akad. Förhandl., XXVIII (1871), p. 686. — *Ar. saccata* O. FABR. is described by me under the name *Lyc. grønlandica* in a paper: Om några Arachnider från Grønland, which will soon be published (in Öfvers. af Vet.-Akad. Förhandl., XXIX (1872), N:o 2).

CAMBRIDGE has kindly sent me English specimens of *L. amentata*, of both sexes, under the name of *L. saccata* BLACKW. Of "*L. paludicola* C. KOCH", I have received of L. KOCH specimens from Bavaria. The species is met with far up in Lappland and the Norwegian Finnmark.

The cephalothorax varies in length between 4 and  $3\frac{1}{2}$  millim.: it is always perceptibly shorter than the tibia + patella of the 4<sup>th</sup> pair, which together are  $5-3\frac{3}{4}$  millim. long. By this both sexes are immediately distinguished from *L. paludicola*, and the female is additionally so by it always distinctly and strongly annulated legs. The organs of copulation are also quite peculiar. The vulva consists of a little depressed area rounded in front and truncated behind, bounded by parallel sides, and little longer than it is broad; in front it exhibits two tubercles or ridges, directed obliquely backwards and outwards, and it is moreover crossed by a longitudinal septum, narrow in front but rapidly and strongly dilated at the posterior extremity: by these tubercles and the septum the area is divided into four small foveæ situated almost in square. In the male the tibial joint of the palpi is dilated towards the extremity, and scarcely half as long long again as it is broad at the base, thickly clothed with deep-black hair, which is longer and more outstanding towards the apex of the joint, so that it there looks broader than it is, almost as broad as the lamina; this latter is short, and black (even at the apex on the under side, in front of the bulbus); the bulbus is also black, and very small. Sometimes however the lamina and bulbus are of a somewhat paler colour. In front of the tumid basis of the bulbus, on the under side, projects a black or dark brown spine, pointing almost forwards, curved outwards and tapering quably to a fine point; this spine, when viewed from the side, is not curved upwards, but straight, and its extremity even rather curved a little downwards.

In *L. hortensis* N. or *L. saccata* C. KOCH, which is considerably smaller than *L. amentata* (the cephalothorax  $2\frac{1}{2}-3$  millim., tibia + patella of the 4<sup>th</sup> pair  $2\frac{3}{4}-3\frac{1}{2}$  millim.), the vulva occupies an oblong area, and consists first of a large, rounded fovea open behind and bounded by a fine semi-elliptically curved costa; in this fovea, near the ends of the costa, is a small oblong tubercle on either side; the fovea is divided by a longitudinal fine septum, which is continued backwards to the rima genitalis, where it is almost triangularly dilated; on each side of this septum, near its posterior

extremity, is a fovea limited outwards by a more or less distinct costa. The whole area is *broader behind than before*, not of equal breadth throughout, as in *L. amentata*. The palpi of the male have almost the same form as those of *L. amentata* ♂; the patellar and femoral joints are yellowish, white-haired above, the two next joints are black, and black-haired above; the spine on the under side of the bulbus is short, *scarcely reaching more than to the middle of the bulbus*; it is blunt at the extremity, and directed outward and somewhat forward; at its base, outwards or backwards, it is dilated into a tubercle or tooth directed backwards.

In *L. annulata* n. the size and the colour is the same as in *L. hortensis*: even the vulva is so similar to that of *L. hortensis*, that I can see no other difference, than that its septum is dilated backwards more gradually, and provided with a longitudinal depression or furrow; but the male's palpi are very remarkable, for *the ordinary spine on the under side of the bulbus is absent*, and in its place appears only a small blunt tubercle (see above, p. 300, the foot-note).

*L. morosa* L. KOCH (Die Arachn.-Fauna Galiz., p. 47) from southern Germany, Bohemia, Galizia and Spain, is very like *L. amentata* both in size and in marking, but is distinguished from it by, among other things, the cephalothorax having *around the central furrow a large, star-shaped paler patch*, which, contrary to what is usually the case in *L. amentata* (and in *L. hortensis* and *L. annulata*), is *not* continued forwards as a longitudinal band first diminishing in width in front of that furrow and then dilating again behind the eyes. The vulva in *L. morosa* is totally unlike that of *L. amentata*, having the form of "little pointed arch, which encloses a shining, arched surface, broader behind" (L. KOCH, loc. cit., p. 47). The male of *L. morosa* is unknown; a ♀ ad. I have received from Dr KOCH<sup>1)</sup>.

1) Among some undetermined spiders from Italy sent me by Prof. CANESTRINI, is a *Lycosa*, which is very closely related to *L. morosa*, and the description of which may be appropriately inserted here: I call it *L. strenua*.

*Lycosa strenua* N., nigricans, dense cinerascens-vel testaceo-pilosa, cephalothorace brevius quam patella cum tibia 4:ti paris, latitudine maxima paullo minore quam longit. tibiæ 4:ti paris, macula dorsuali magna testacea, antice v breviter semicirculo testaceo aucta, vittaque ad marginem utrinque ex maculis testaceis formata; palpis et pedibus testaceis, nigro-annulatis, tibiis anterioribus subter versus basin aculeis longis et appressis armatis. — ♀ ad. Long. c:a 8 millim.

Cephalothorax c:a 3 $\frac{2}{3}$  millim. longus, 3 millim. latus, quam patella + tibia 4:ti paris brevior multo, latitudine maxima longitudinem tibiæ ejusdem paris non

Another species described by L. Koch, and closely related to *J. amentata*, is *L. ferruginea* L. Koch (loc. cit., p. 46) from southern Germany and Galizia. It is however something smaller and darker than the usually occurring varieties of *J. amentata*; the cephalothorax in the female is about  $3\frac{1}{2}$  millim., the patella + tibia of the 4<sup>th</sup> pair about  $3\frac{3}{4}$  millim. long. The male is unknown. The

æquanti; in fundo niger, circa sulcum medium ordinarium macula magna testacea notatus: hæc macula rotundata vel forma fere cordis est, in lateribus dentata, postice acuminata, antice in duas lineas breves valde divaricantes, V vel semicirculum formantes producta, quæ lineæ non usque ad oculos posticos pertinent; præterea seriem ex maculis testaceis paucis plus minus disjunctis formatam utrinque ad marginem ostendit. Sternum nigrum, cinereo-pilosum. Series oculorum anteriorum parum procurva, medii eorum majores quam laterales et inter se paullo magis quam ab iis distantes. Mandibulæ fusco-testaceæ, cinereo-pilosæ, apice nigricantes; maxillæ et labium nigricantia, illæ margine, hoc apice testaceo. Palpi testacei, nigro-annulati. Pedes longiores, 1:mi paris c:a  $11\frac{1}{2}$ , 4:ti paris c:a  $16\frac{1}{2}$  millim. longi; patella cum tibia hujus paris fere 5 millim.; tibiæ anticæ subter inter basin et medium paribus binis aculeorum longorum et appressorum (par tertium, magis versus apicem, paullo altius locatum est, magisque in lateribus tibiæ quam subter) et in ipso apice aculeis duabus brevibus armatæ. Color pedum testaceus, annulis nigris: femora binos annulos habent, et præterea ad basin et apice, saltem subter, nigra vel nigro-maculata sunt; tibiæ et metatarsi annulos quoque binos nigros, alterum basalem, latum, alterum medium, ut et apicem subter plus minus distincte infuscatum ostendunt; tarsi summo apice paullo fusciore. Abdomen (in exemplis a me visis, valde detritis) in fundo nigricans; dorsum ejus vestigia vittæ vel lineæ anticæ mediæ abbreviatæ, et macularum in series duas ordinarum postice ostendit: pilis cinerascens vel sub-testaceis dense vestitus fuisse videtur. Vulva mediocris, antice angusta, postice dilatata: antice ex fovea formatur parva oblonga (duplo circiter longiore quam latiore), apice antico rotundato, lateribus fere parallelis, postice parum divaricantibus, et mox pone eam ex elevatione convexa nitida, posteriora versus gradatim dilatata, antice triangula et hic per foveam illam ut septum angustum ad apicem ejus anticum continuata; pars posterior hujus elevationis utrinque sulcos duos parvos ostendit, tuberculum plus minus distinctum amplectentes. — *Mas* ignotus.

Feminas duas adultas, in spiritu vini asservatas, ex Italia mecum communicavit Cel. CANESTRINI.

*L. amentata* et *L. morosæ* hæc species simillima est: ab utraque vero formâ vulvæ facile dignoscitur. *L. amentata* præterea differt a *L. strenua* tibia 4:ti paris vix longiore quam latit. maxima cephalothoracis, vitta cephalothoracis ante sulcum medium primum angustata et tum plerumque rursus dilatata; *L. morosa*, quæ ut *L. strenua* loco vittæ maculam magnam in lateribus dentatam habet, v illo vel semicirculo, quo hæc macula antice in *L. strenua* aucta est, carere videtur, et præterea aculeos 4 basales subter in tibiis anticis multo breviores et minus appressos habet: in *L. strenua* par eorum primum apice suo usque ad medium paris secundi pertinet, in *L. morosa* vero vix vel non ad basin eorum.

vulva is of a type quite different from that of *L. amentata*, and more resembles that organ in *L. paludicola*. It forms in fact a long, narrow area of uniform breadth, bounded on both sides by an elevated line; its anterior extremity is surrounded by an elevated curved line, and in its hindmost part it dilates rapidly and suddenly: within the edges of the posterior dilatation, one each side, runs a furrow, which furrows enclose a transverse, almost semi-oval field: along the bottom of the narrow anterior part of the vulva runs a fine elevated line cloven in two diverging branches behind, and terminating in the above-named transverse field. Conf. L. KOCH, loc. cit. — For two full-grown females of this species I am indebted to the kindness of Dr L. KOCH.

*L. prativaga* L. KOCH (loc. cit., p. 43) may also possibly be confounded with *L. amentata*, especially the male, which however has particularly strongly and distinctly annulated legs; the lamina bulbi is longer and slenderer in *L. prativaga* than in *L. amentata* ♂, not black on the under side of the extremity, but rusty brown; the spine beneath the bulb is longer and slenderer, reddish brown; when viewed directly from beneath, it is straight (not curved outwards), when viewed from the side, it is curved upwards; the female is more like *L. monticola* ♀, with which species it also most nearly agrees in size. But its nearest relation is *L. pullata*: vid. infra, p. 306.

(Pag. 499.) 14. **L. paludicola** [= *Lycosa paludicola* (CLERCK) 1757].

- Syn.: 1757. ARANEUS PALUDICOLA CLERCK, Sv. Spindl., p. 94, Pl. 4, tab. 7.  
 1758. ARANEA FUMIGATA LINN., Syst. Nat., Ed. 10, I, p. 621.  
 1805. LYCOSA " WALCK., Tabl. d. Aran., p. 13 (salt. ad part.).  
 1825. " PALUDICOLA ID., Faune Franç., Arachn., p. 26 (salt. ad part.).  
 1833. " " SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 179 (excl. "fem. minor.").  
 1848. " (LEIMONIA) FUMIGATA C. KOCH, Die Arachn., XV, p. 16, Tab. DIX, figg. 1425, 1426.  
 1856. " PALUDICOLA THOR., Rec. crit. Aran., p. 58.  
 1867. LEIMONIA FUMIGATA OHL., Aran. d. Prov. Preuss., p. 135.

*Ar. fumigata* LINN. no doubt belongs, as is usually supposed, to this species, whereas *Ar. fumigata* CLERCK is probably only a dark variety of *L. amentata* or the preceding species. WALCKENAER'S *L. paludicola* (Faune Franç., Arachn., p. 26; Ins. Apt., I, p. 333) undoubtedly has its place here, but probably also includes *L. pullata*, to which three of his references (*Ar. pullatus* CLERCK, *Lyc. lignaria*

C. KOCH and *L. obscura* BLACKW.) belong. SUNDEVALL has also confounded *L. pullata* with *L. paludicola*: his "feminæ minores, verisimiliter præmaturæ, long. thoracis 2½ millim." (loc. cit., p. 180), evidently belong to *L. pullata*. WALCKENAER indeed, in H. N. d. Ins. Apt., I, p. 334, takes up "*L. fumigata*" as a separate species, but clearly only after C. KOCH, whose *L. fumigata*, as is known, is identical with *L. paludicola* (CLERCK). WALCKENAER does not say either that he had himself ever seen his "*L. fumigata*", or that it is met with in France. — *Ar. littoralis* DE GEER, to which DE GEER erroneously refers *Ar. paludicola* CLERCK, and which WALCKENAER cites under *L. paludicola*, does not belong to this, but to the preceding species, *L. amentata* (*L. paludicola* C. KOCH). Another synonym given by him (loc. cit., IV, p. 396), *L. latitans* BLACKW., does not belong to the genus *Lycosa* sensu strict. at all, but to *Pirata* SUND. (*Potamia* C. KOCH). Concerning this last mentioned species, see farther on under *L. piratica* WESTE.

*L. paludicola* is easily distinguished from *L. amentata*, not only by its darker colour, by the indistinctness of the rings on the legs, by the different form and colour of the longitudinal bands on the cephalothorax, by the coarser and longer hair, etc., but also by its comparatively shorter legs (the cephalothorax being very nearly as long as patella + tibia of the 4<sup>th</sup> pair) and an entirely different form of the organs of copulation. The vulva consists of a narrow, long area or furrow, bounded by an elevated edge and rounded at its anterior extremity, which area behind, near the rima genitalis, is rapidly dilated on both sides and there provided with a large fovea. The bulbus genitalis has on the under side of its tumid, reddish brown base a conspicuous single tooth; the usual spine extends obliquely forwards and outwards, is reddish brown, compressed and, viewed from the under side of the bulbus, flattened, gradually and slightly increasing in breadth from the base to the middle, obliquely pointed and, towards the apex, slightly curved backwards.

(Pag. 501.) 15. *L. pullata* [= *Lycosa pullata* (CLERCK) 1757].

Syn.: 1757. ARANEUS PULLATUS CLERCK., Sv. Spindl., p. 104, Pl. 5, tab. 7.

1789. ARANEA PULLATA OLIV., Encycl. Méth., IV, p. 218.

?1825. LYCOSA PALUDICOLA WALCK., Faune Franç., Arachn., p. 26 (ad part.)

1833. „ LIGNARIA C. KOCH, in HERR-SCHÄFF., Deutschl. Ins., 120, 9, 10 (sec. KOCH, Die Arachn.).

1833. „ PALUDICOLA SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 179 (ad part.: "feminæ minores").

1841. *LYCOSA OBSCURA* BLACKW., The differ. in the numb. of eyes, *cet.*, in Transact. of the Linn. Soc., XVIII, p. 611.
1848. " (*LEIMONIA*) *PULLATA* C. KOCH, Die Arachn., XV, p. 25, Tab. DXI, figg. 1431—1433.
1856. " *PULLATA* THOR., Rec. crit. Aran., p. 65.
1861. " *OBSCURA* BLACKW., Spid. of Gr. Brit., I, p. 28, Pl. II, fig. 11.
1867. *LEIMONIA PULLATA* OHL., Aran. d. Prov. Preuss., p. 134.

As regards WALCKENAER's and SUNDEVALL's *L. paludicola*, see the foregoing species, *L. paludicola* WESTR. — From CAMBRIDGE I have received English specimens of *L. pullata* under the name of *L. obscura* BLACKW. I have also myself several years ago found the species in the vicinity of London. Neither of C. KOCH's citations: *Ar. lignarius* CLERCK and *Lyc. lignaria* SUND., belong to his *L. pullata*, but both indicate an entirely different and much larger spider, resembling in colour *L. blanda* C. KOCH. Vid. supr. p. 294 under *L. lignaria* WESTR. *L. paludosa* HAHN and *L. sollers* WALCK., taken up as synonyms by C. KOCH, are also probably different from *L. pullata*: vid. supr., p. 291, under *L. tarsalis* WESTR.

*L. pullata* is certainly in colour very like *L. paludicola* CLERCK, but is immediately distinguishable by its much smaller size; for whereas in *L. paludicola* the cephalothorax is usually 4 millim. long, in *L. pullata* it is only  $2\frac{1}{2}$ — $2\frac{3}{4}$  millim. The organs of copulation are quite different. The vulva consists of a large transverse area, the greatest part of which is occupied by two large, almost triangular foveæ, bounded by a fine border and furrow, the bases of which are turned inwards and their apices outwards; they are separated by a rather narrow septum somewhat broader behind, which has a distinct furrow throughout its length. At each side of the extremity of the septum, in the posterior angle of the triangular foveæ, appears a coarse low tubercle. The lamina bulbi of the male is at the apex, beneath, yellowish brown; the black bulb sends out from its swelled basal part a reddish brown, uniformly tapering spine directed diagonally straight outwards and forwards, which reaches to the border of the lamina and is slightly curved upwards. Immediately in front of this spine, and extending parallel to it from the inner margin of the bulb, appears another spine, which is finer, shorter, more rapidly curved, as also darker and sharper.

Closely allied to *L. pullata* by the form of the organs of copulation, is *L. prativaga* L. KOCH (Die Arachn.-Fauna Galiz., p. 43), which, according to specimens wherewith I have been fa-



voured by L. KOCH and OHLEET, is identical with *Leimonia riparia* OHL. (non C. KOCH). It is however easily distinguished by the legs being thickly and distinctly annulated, especially in the male, and by the cephalothorax of the female having the three pale longitudinal bands covered with yellowish- or reddish-white hair, so that, as far as regards colour, the female much resembles *L. monticola* (CLERCK). *L. prativaga* is slightly larger (the cephalothorax about 3 millim.) than *L. pullata*. The vulva, in *L. prativaga*, consists of an area broader than it is long, and broader in front than behind; in the anterior part it exhibits two large, almost triangular foveæ situated at a pretty good distance from each other, with their apices directed outwards, and immediately behind them, and somewhat nearer together, two oblong, short, bright elevations, forming a continuation of the posterior angles of the above-mentioned foveæ; between these two elevations or costæ is a third, which is almost triangular, with the apex pointing forward and connected with the interval between the foveæ. The male's bulbus genitalis shows no easily observable difference from that of *L. pullata*; nevertheless the finer spine, which in *L. pullata* shows itself in front of the usual, coarser one, is in *L. prativaga* scarcely discernible, and for the most part concealed by the coarser spine. See L. KOCH, loc. cit., as also above, p. 304. — *L. prativaga*, which had not hitherto been recognised as a Swedish spider, I have myself met with at Söderköping; it has also been captured in Skåne by Mr EISEN and Mr ROTH.

*L. riparia* C. KOCH<sup>1)</sup> is nearly allied to *L. pullata* and *L. prativaga*: it is about the same size (cephalothorax 3, patella + tibia of the 4<sup>th</sup> pair 3½ millim.), and the colour is also nearly the same, only somewhat paler. The legs are marked with very distinct dark rings, at least in the female, the coxæ of which are yellow. (In the only male specimen I have seen, only the thighs are distinctly annulated). The male's palpi are almost totally black; the bulbus is scarcely swelled on the under side at the base; the ordinary spine is brownish, quite uncommonly long, issuing near the inner margin of the bulbus; it is directed forwards and outwards, and reaches beyond the outer side of the apex (or solid, not excavated part) of

1) Die Arachn., XV, p. 29, Tab. DXII, figg. 1435, 1436. — HENTZ has also described a North American species under the name of *Lyc. riparia* as early as 1844 (Descr. and fig. of the Aran. of the U. States, in Boston Journ. of Nat. Hist., p. 389, Pl. XVII, figg. 13—15). This species appears however not to belong to *Lycosa* sensu strict., but to *Pirata*.

the lamina. Seen from below this spine gradually tapers towards the rather obtuse extremity, which is curved rather strongly upwards. At its base, on the anterior or interior side, and almost concealed by it, is seen another much finer and shorter spine curved upwards. The bulbus has also nearer the base, outwards, a small black tooth, pointing downwards and curved somewhat backwards. The vulva occupies a large, arched or elevated area, limited by two more or less distinct, low, coarse, (-formed ridges curved *from* each other and strongly converging behind: the costæ are outwards limited by a large shallow depression of corresponding curvature: these depressions show a low shining tubercle posteriorly, by which they are imperfectly divided into two foveæ or depressions each: *the four foveæ form a trapezium much broader in front.* — Dr KOCH has kindly supplied me with one male and a few female specimens of *L. riparia* C. KOCH<sup>1</sup>).

I possess a spider from the north-western parts of Herjeådalen (the mountain of Funäsdal etc.) of which the female is so nearly allied to *L. riparia* ♀, as to be distinguishable from it perhaps only by the coxæ being of the same rusty- or brownish-yellow colour as the rest of the legs, not of a paler yellow, as in *L. riparia* ♀; the male on the contrary, as may be seen from the following description, differs very much from the spider which I, with L. KOCH, take to be the male of *L. riparia*.

*Lycosa pernix* N., nigro-fusca, cephalothorace vittis tribus fusco-testaceis, media inæquali, lateralibus continuis, palporum parte tibiali in ♂ supra fusco-testaceo; pedibus fusco-testaceis, in ♂ ad basin infuscatis, in ♀ dense fusco-annulatis, coxis concoloribus; vulva ex area impressionibus duabus magnis fere (-formibus, foras curvatis, limitata constanti, bulbo genitali basi inflato, spina ordinaria obliqua brevi, apice rotundata, ad basin in dentem retro et deorsum directum dilatata. — ♂♀ ad. Long. ♂ c:a 6, ♀ c:a 7 millim.

*Mas.* Cephalothorax fere 3 millim. longus, paullo brevior quam patella + tibia 4:ti paris, in fundo nigro-fuscus, vittis tribus fusco-testaceis: media circa sulcum ordinarius sat lata, anteriora versus angustata, sed pone oculos posticos rursus sub-dilatata; lateralibus sat angustis, continuis, supra-marginalibus. Clypeus testaceus. Sternum nigricans, clarius sub-variaturum. Mandibulæ nigricantes, testaceo-maculatæ, præsertim ad basin. Maxillæ et labium nigra, hoc apice, illæ margine testaceæ. Palpi fusco-testacei, parte femorali nigricanti, supra clarius sublineata, tibiali lateribus ad apicem nigricantibus, lamina nigricanti, versus apicem sub-fusca ibique cinereo- vel sub-testaceo-pilosa; præterea palpi pilis nigricantibus tantum et fuscis vestiti. Pars tibialis paullo longior quam latior, patellaris tibiali paullo longior. Pars basalis bulbi valde inflata et fere in formam trianguli producta; ex hac parte triangula exit spina ordinaria brevis, fortis, sursum curvata, foras et anteriora versus directa, non ad marginem laminæ pertinens, apice obtusa et rotundata, basi lata et, postice, in dentem retro et deorsum directum dilatata; præterea versus medium marginis exterioris dentem magnum, fortem, humilem, lateraliter compressum, oblique sub-triangulum, nigricantem

(Pag. 505.) 16. *L. fabrilis* [= *Tarentula fabrilis* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS FABRILIS CLERCK., Sv. Spindl., p. 86, Pl. 4, tab. 2.  
 1789. ARANEA " OLIV., Encycl. Méth., IV, p. 217.  
 ?1805. LYCOSA " WALCK., Tabl. d. Aran., p. 13.  
 ?1825. " ID., Faune Franç., Arachn., p. 17, Pl. 2, fig. 5.  
 1831. " MELANOGASTER HAHN, Die Arachn., I, p. 102, Tab. XXVI, fig. 76.  
 1833. " FABRILIS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 182.  
 ?1848. " (TARANTULA) FABRILIS C. KOCH, Die Arachn., XIV, p. 168 (*ad part.*: Tab. CCCXCXVIII, fig. 1392).  
 1856. TARENTULA FABRILIS THOR., Rec. crit. Aran., p. 41.  
 1867. TARANTULA " OHL., Aran. d. Prov. Preuss., p. 138 (*ad part.*).  
 1870. " " ZIMMERM., Verzeichn. d. Spinn. v. Niesky, p. 44.

ostendit. Pedes obscure testacei, non annulati, coxis nigris, testaceo-maculatis, femoribus ad basin nigricantibus, supra ad basin macula oblonga clariore, linea nigricanti persecta, aliaque ejusmodi macula versus apicem pictis; tarsis omnibus et metatarsis posticis summo apice sub-infuscat. Pedes 4:ti paris  $10\frac{1}{2}$ , patella + tibia eorum  $3\frac{1}{2}$  millim. longi. Abdomen nigro-fuscum, vitta pallidior media abbreviata antice, ut in plerisque; nulla alia pictura in specimine unico valde detrito a me viso discernenda.

*Femina* (an re verâ hujus speciei?). Cephalothorax 3 millim. longus, paulo brevior quam patella + tibia 4:ti paris, ad colorem ut in mare, clypeo fusco-testaceo; vittæ longitudinales cephalothoracis in viva aranea certe dense pallido-pilosæ. Sternum nigricans, clarius sub-variatur. Mandibulæ fusco-testaceæ; labium fuscum, apice clarius. Palpi fusco-testacei, minus distincte fusco-annulati. Pedes fusco- vel ferrugineo-testacei, distincte fusco-annulati, coxæ subter fusco-testaceæ, non late flavo-testaceæ; femora annulis 4, supra plus minus distincte in maculas divulsis, subter obsoletis: patellæ annulo 1, tibiæ anteriores 3, posticæ vero 4, metatarsi 3 annulis; tarsi apice vix infuscati. Pedes primi paris 8, 4:ti paris  $11\frac{1}{2}$  millim. longi; patella + tibia 4:ti paris  $3\frac{1}{3}$  millim. Abdomen in fundo fuscum, vitta media abbreviata antica, umbra nigricanti limitata, et maculis sub-seriatis nigricantibus postice utrinque; in exemplis paucis detritis, quæ vidi, nulla alia pictura remanet. Vulva aream sat magnam occupat: utrinque enim ad rimam genitalem adest impressio magna, parum profunda, auri sub-similis, vel fere (-formis, posterius tuberculum amplectens: interstitium inter has impressiones fere) (-forme, postice angustius, ut in *L. riparia*).

Marem unicum et feminas paucas, in provincia Herjeådalen Sueciæ borealis a D:re F. S. SÖDERLUND inventos, possideo. Mas a ♂ *L. ripariæ* facillime distinguitur femoribus non nigro-annulatis, palpis non nigris, sed ad maximam partem fusco-testaceis, forma et armatura bulbi omnino diversa, cet. Femina rursus adeo similis *L. ripariæ* ♀, ut colore tantum coxarum fusco- vel ferrugineo-testaceo (non, ut in *L. riparia*, late flavescenti) illam ab hac internoscere possim: vulva in utraque specie eandem formam habet omnino.

Although CLERCK's figures of his *Ar. fabrilis* and *Ar. inquilinus* are so good, that it is difficult to understand how these two species could be confounded with each other, there are nevertheless few of CLERCK's spiders, which have been so greatly mistaken by non-Swedish arachnologists, and the synonyms of which it is so difficult to ascertain. — First as regards WALCKENAER, judging from the tolerably detailed description in the Faune Franç., it seems to me probable, though far from certain, that his *L. fabrilis* is the same as the *Ar. (Lyc. or Tar.) fabrilis* of CLERCK and the later Swedish arachnologists; it is there stated of the marking on the back of the abdomen: "près du corselet, ce sont deux triangles réunis, qui forment un polygone allongé, rétréci dans son milieu." The expression "bordés de jaune," as applied to the triangles which form this polygon, does however not suit *Tar. fabrilis* (CLERCK): the reddish colour on the (wretched) figure that accompanies the description, seems even rather to indicate *T. inquilina* (CLERCK) than *T. fabrilis*. But on the other hand the marking on the back of the abdomen — and I think it is on this that most stress must be laid — agrees better with *T. fabrilis*; and I have also received from SIMON a ♂ *ad.* of this last species from the neighbourhood of Paris under the name of *Lyc. fabrilis* WALCK. — WALCKENAER's statement (H. N. d. Ins. Apt., I, p. 307), that the anterior row of eyes is curved *backwards*, in a direction opposite to that in the large, true Tarantulæ, is equally erroneous for *T. fabrilis* and *T. inquilina*.

C. KOCH's *Lyc. (Tar.) fabrilis* is the same as *Ar. inquilinus* CLERCK (*L. inquilina* C. KOCH is quite another species, and identical with *L. andrenivora* WALCK., BLACKW., or *L. barbipes* SUND.: vid. infr. under *L. barbipes* WESTR.). It is nevertheless probable, that C. KOCH had also seen specimens of the right *T. fabrilis* and confounded it with *T. inquilina* (CLERCK): one is at least led to suspect this from his taking up as a synonym "*L. melanogaster* HAHN," which is clearly identical with *T. fabrilis* (CLERCK). In *T. inquilina* in fact the upper part of the abdomen never has a sharply-defined, spear-formed black area in front, such as appears on HAHN's figure of *L. melanogaster*; such an area on the contrary is always conspicuous in *T. fabrilis*, as also in the female of the spider called by C. KOCH *L. inquilina*. The marking on the back of the abdomen is nearly the same in both these last-mentioned species, and pretty much such as KOCH has represented it in fig. 1388, loc. cit.: it is however much purer black and white in *L. fabrilis*, which more-

over is considerably *larger*. *Full-grown* specimens of *T. fabrilis* (as also of the real *T. inquilina*) always have the *belly black*, which is on the contrary *never* the case with C. Koch's *L. inquilina*. — Koch's figure 1392 seems however to represent a young *T. fabrilis* (CLERCK).

Of *T. fabrilis* OHL., OHLERT has favoured me with specimens, belonging to *T. fabrilis* (CLERCK). I have myself caught *T. fabrilis* (CLERCK) in Germany, at Pyrmont. — Full-grown specimens of both sexes of *T. inquilina* (CLERCK) from Bavaria have been sent me by L. KOCH under the name of *L. fabrilis* C. KOCH.

A careful reading of the descriptions of *T. fabrilis* and *T. inquilina*, given in Rec. crit. Aran. (p. 41, 44) and in WESTRING'S Aran. Suec. (p. 505, 507), might probably prevent all farther confounding of these two species. They have also been correctly distinguished by ZIMMERMANN loc. cit. It may suffice here to state, that the normal marking on the upper part of *T. inquilina* (CLERCK) is just such as C. KOCH has represented it loc. cit., figg. 1389 (♂) and 1390 (♀). The marking on the back of the abdomen of *T. inquilina* (CLERCK) is frequently very indistinct, especially in the male, where the back along the middle is often of a uniform reddish grey colour, only with two small black spots in front (just such a ♂ *jun.* is *Ar. nivalis* CLERCK). Both in ♂ and ♀ of *T. fabrilis* (CLERCK) on the other hand, the spear-shaped spot on the anterior part of the abdomen is always plainly visible, and the lateral bands on the cephalothorax are always paler and more sharply defined than in *T. inquilina*. The female *T. fabrilis* has along the middle of the pars cephalica a fine, brown, double line, which in *T. inquilina* is usually, if not always, absent. In the former species the mandibles are *longer*, in *T. inquilina* ♀ *shorter*, than the metatarsi of the 1<sup>st</sup> pair. The vulva in *T. fabrilis* consists of a narrow, oblong fovea, with a narrow and low septum at the bottom; immediately behind that fovea is a broader transverse costa, dilated in front into a short angle united with the septum. The male's bulbus genitalis has, beneath, on the outer side, a *strongly compressed, lamellar process, which is higher inward, and which, on its anterior surface, bears a lamellar, broadly truncated tooth*; viewed from within and from behind, this process has the form of a tooth slightly cloven at the apex, with pointed branches; viewed from the outer side, it is pretty much like a coarse tooth bent forwards into a right angle. In *T. inquilina* ♂ we find at the same place only a low, simple, short lamella or compressed tooth, directed obliquely inwards, which

hardly rises over the surface of the bulbus. The vulva in *T. inquilina* is composed of two long, thin, parallel, elevated lines, separated only by a fine furrow, and which at the rima genitalis bend outwards almost at a right angle, thus forming together a narrow anchor or  $\perp$ .

Of the synonyms given by WALCKENAER to his *L. fabrilis*, *L. sabulosa* HAHN does not belong to it, but to *T. andrenivora* or *barbipes*. He erroneously takes up *L. melanogaster* HAHN under both his *L. (Tar.) narbonensis* and his *L. captans* (H. N. d. Ins. Apt., I, p. 283, 306). *L. narbonensis* WALCK., or *T. melanogaster* (LATR.), which WESTRING supposes to stand in close relationship with *T. fabrilis*, is an incomparably larger spider: the cephalothorax of a specimen in my collection is near 14 millim. long, whereas in *T. fabrilis* it rarely exceeds 7 millim. *L. captans* WALCK., on which see the next following species, more nearly resembles *T. fabrilis* (CLERCK).

(Pag. 507.) 17. **L. inquilina** [= *Tarentula inquilina* (CLERCK) 1757].

- Syn.: 1757. ARANEUS INQUILINUS CLERCK, Sv. Spindl., p. 88, Pl. 5, tab. 2.  
 1757. " NIVALIS ID., ibid., p. 100, Pl. 5, tab. 3 (= ♂ jun.).  
 1789. ARANEA " OLIV., Encycl. Méth., IV, p. 218.  
 1789. " INQUILINA ID., ibid., p. 217.  
 ? 1831. LYCOSA LUGUBRIS HAHN, Die Arachn., I, p. 19, Tab. V, fig. 15.  
 1833. " TRABALIS SUND., Sv. Spindl. Beskrifn., in Vet.- Akad. Handl. f. 1832, p. 182 (ad part.: "♂ ad.").  
 1834. " SCHMIDTII HAHN, Die Arachn., II, p. 58, Tab. LXIII, fig. 147.  
 1837. " AUDAX WALCK., H. N. d. Ins. Apt., I, p. 335.  
 1848. " (TARANTULA) FABRILIS C. KOCH, Die Arachn., XIV, p. 168, Tab. CCCXCXVIII (salt. ad part.:) figg. 1389, 1390.  
 1851. " INQUILINA WESTR., Förteckn. etc., p. 53.  
 1853. " KOLLARI DOLESCH., Syst. Verzeichn., cet., in Verhandl. d. zool.-bot. Gesellsch. in Wien, IX, p. 643 (24).  
 1856. TARENTULA INQUILINA THOR., Rec. crit. Aran., p. 44, 47.  
 1867. TARANTULA FABRILIS OHL., Aran. d. Prov. Preuss., p. 138 (ad part.)  
 1870. " INQUILINA ZIMMERMAN, Verzeichn. d. Spinn. v. Niesky, p. 44.

As regards *Ar. inquilinus* and *Ar. nivalis* CLERCK, vid Rec. crit., p. 47 and 63. — *Lyc. (Tar.) inquilina* C. KOCH is an entirely different species: vid. inf., p. 318, *L. barbipes* WESTR. — Regarding *L. (T.) fabrilis* C. KOCH, and the differences between it and the true *T. fabrilis* (CLERCK), see the preceding species. — HAHN's figure of *L. Schmidtii* bears indeed but very little resemblance to *T. inquilina*

(CLERCK), but the description suits accurately, and C. KOCH, who had seen the original specimen of *L. Schmidtii*, declares (loc. cit., p. 171) that it is identical with his *L. fabrilis*, i. e. with *Tar. inquilina* (CLERCK). — I have in Vienna seen original specimens of *L. Kollari* DOLESCH.

*Lycosa lugubris* HAHN probably belongs to this species, for it is stated of it: "Hinterleib unten dunkelschwarz", which suits neither *L. inquilina* C. KOCH (*T. andrenivora*), to which C. KOCH refers it, nor *L. vorax* WALCK. (*T. trabalis*), under which it is classed by WALCKENAER (H. N. d. Ins. Apt., I, p. 314).

Of the synonyms attributed by C. KOCH to his *L. fabrilis* or *T. inquilina* (CLERCK), *Ar. fabrilis* CLERCK, *L. fabrilis* SUND. and probably also *L. fabrilis* WALCK., do not belong to it, but to *T. fabrilis* (CLERCK), NOB. — *L. andrax* WALCK. on the other hand appears to me to be a tolerably certain synonym: this is on the contrary not the case with *L. accentuata* WALCK.<sup>1)</sup>, which, according to WALCKENAER, is the same as *L. accentuata* LATR.<sup>2)</sup>, and I have accordingly not ventured to take up *L. accentuata* among the synonyms of *T. inquilina*. *L. captans* WALCK., also cited as a synonym by C. KOCH, and under which WALCKENAER erroneously classes *L. fabrilis* C. KOCH and *L. melanogaster* HAHN, is an entirely separate species; I take it to be identical with *L. radiata* LATR., WALCK., which is stated to be of the same size as *L. fabrilis*<sup>3)</sup>.

I have some specimens of a spider from Italy and the South of France, which appears to me to be the same as *L. radiata* LATR., and of which I shall give a description below<sup>4)</sup>. It is particularly

1) Faune Franç., Arachn., p. 20; H. N. d. Ins. Apt., I, p. 311.

2) Nouv. Dict. d'Hist. Nat., 2<sup>e</sup> Éd., XVIII, p. 294 (sec. WALCK.).

3) LATR., ibid., p. 292 (sec. WALCK.). "*Lycosa radiata* (Long. 6 lig.). Corselet brun foncé, avec trois branches longitudinales grises, quatre sur chaque côté partant du centre en rayons divergens; dessous de l'abdomen noir. Quatre chevrons fauves marqués sur le dos". (WALCK., Faune Franç., Arachn., p. 15).

4) *Tarentula radiata* (LATR.), fusca vel fusco-testacea, cephalothorace vittis tribus longitudinalibus testaceis distinctissimis radiisque utrinque 4 testaceis postice nigro-marginatis notato, mandibulis metatarsis 1:mi paris brevioribus, palpis pedibusque testaceis, illis apice tantum infuscatis, femoribus fusco-sub-maculatis, tibiis metatarsisque saltem posterioribus subter ad apicem et plerumque ad basin quoque nigris; abdominis dorso antice lineis duabus sinuatis testaceis, maculam magnam oblongam fuscam includentibus, ventre aut atro ( $\alpha$ ), aut testaceo, macula media triangula nigra ( $\beta$ ), in maculas parvas interdum divulsa ( $\gamma$ ), aut toto testaceo ( $\delta$ ). — ♂♀ ad. Long. ca 14 millim.

remarkable on account of the colour of the belly varying in *full-grown* specimens from pure black to pure grey or yellowish, which

- Syn.*: 1817. *LYCOSA RADIATA* LATR., in Nouv. Dict. d'Hist. Nat., 2<sup>e</sup> Éd., XVIII, p. 292 (*sec.* WALCK.).
1825. " " WALCK., Faune Franç., Arachn., p. 15.
1837. " CAPTANS ID., H. N. d. Ins. Apt., I, p. 306 (= Var.  $\beta$ ).
1839. " FAMELICA C. KOCH, Die Arachn., V, p. 123, Tab. CLXXVII, fig. 417 (= Var.  $\delta$ ).
1845. " VAGABUNDA LUC., Explor. de l'Algér., Arachn., p. 112, Pl. 3, fig. 2 (= Var.  $\delta$ ).
1848. " (TARANTULA) ISABELLINA C. KOCH, Die Arachn., XIV, p. 158, Tab. CCCXCVI, fig. 1384 (= Var.  $\alpha$ ).
1870. " FAMELICA BLACKW., A list of Spid. capt. . . in Tuscany, *cet.*, in Linn. Soc. Journ., Zool., X, p. 405, Pl. XV, fig. 1 (= Var.  $\alpha$ ,  $\delta$ ).
1871. TARENTULA FAMELICA SIM., Aran. nouv. ou peu connus du midi de l'Europe, in Mém. de la Soc. Roy. d. Sc. de Liège, 1870, p. 85 (= Var.  $\gamma$ ,  $\delta$ ).

*Femina ad.* Cephalothorax angustior, c.a  $7\frac{1}{2}$  millim. longus,  $5\frac{1}{3}$  millim. latus, brevior quam patella + tibia 4:ti paris, latitudine ejus maxima longitudinem tibiæ 4:ti paris æquant; fuscus, vittis longitudinalibus tribus latis, testaceis: vitta utrinque marginali optime limitata, usque ad clypeum pertinenti, in margine superiore inæquali vel crenulata, sed non late undulato-dentata, et prope marginem cephalothoracis lineâ fuscâ, in maculas parvas divulsâ, geminata; vittaque media, in parte cephalica dilatata et hic interdum linea longitudinali parva fusca utrinque notata; in interstitiis fuscis inter vittas marginales et mediam adsunt lineæ angustæ radiantes testaceæ postice nigro-marginatæ utrinque quatuor; vittæ et radii cum clypeo pube densa cinereo-testacea tecti. Sternum aut testaceum, linea postica media abbreviata fusca (Var.  $\beta$ ) et præterea interdum maculis duabus fuscis antice (Var.  $\alpha$ ), aut nigricans, macula vel linea abbreviata antica testacea (Var.  $\gamma$ ). Series oculorum antica manifeste brevior quam media, paulloque procurva; oculi ejus medii paullo majores quam laterales. Mandibulæ metatarsis anticis 1 millim. breviores, ad basin fusco-testaceæ et testaceo-vel cinereo-pilosæ, apice late nigræ. Maxillæ et labium obscurius vel clarius testacea, hoc interdum basi fusco. Palpi tennes, testacei, parte tantum tarsali apice nigricanti. Pedes longiores, graciles; 4:ti paris cephalothorace  $3\frac{2}{5}$  longiores ( $25\frac{1}{2}$  millim. longi; tibia hujus paris  $5\frac{1}{3}$ , patella + tibia 8 millim., pedes 1:mi paris  $20\frac{1}{2}$ , metatarsi eorum plus 4 millim. longi). Color pedum testaceus: coxæ plerumque subter nigro-maculatæ, et femora extus minus distincte fusco-maculata sunt; tibiæ 4:ti paris subter basi et apice sat late pure nigræ; reliquæ tibiæ apice tantum subter evidenter nigricantes, basi parum infuscatæ; metatarsi et tarsi apice plus minus distincte nigri, præsertim postici. Interdum (Var.  $\beta$ ) pedes toti testacei sunt, modo femoribus indistincte fusco-maculatis et tibiis metatarsisque posticis apice subter nigris. Tarsi et metatarsi 4 anteriores et tarsi 4 posteriores subter scopula densa fusca vel nigra vestiti. Abdomen in dorso fuscum, prope cephalothoracem  $\wedge$  testaceo, antice late nigro-marginato, ma-



is clearly the chief cause of its having been described under several different names, and offers a warning, that in distinguishing the species included in the genus *Tarentula*, we must not *always* lay so great stress as it has been hitherto usual to do, on the colour of the

culisque vel lineis duabus testaceis paullo divaricantibus et cum  $\wedge$  illo utrinque lineam sub-sinuatam formantibus notatum, his lineis aream fuscam postice apertam ibique paullo latiore et puncto nigro utrinque notatam includentibus: pone hanc aream maculæ vel lineæ quædam obliquæ, binæ oppositæ, seriem utrinque formant, quæ maculæ tamen, propter pubem densam fusco-testaceam, quo vestitum est abdomen, plerumque tantum in exemplis in spiritu vini immersis bene manifestæ sunt. Puncta albicantia, utrinque in seriem ordinata, et lineis transversis angulatis albicantibus, antice in medio nigro-marginatis bina conjuncta, in parte dorsi posteriore, quum viveret aranea, adfuisse videntur. Latera abdominis lætius testaceo-pilosæ; venter a rima genitali usque ad mamillas testaceas ater; regio circa vulvam quoque sat late nigra. In Var.  $\beta$  abdomen subter testaceum est, macula pone rimam genitalem sat magna, oblonga, triangula, nigra, apice retro directo et truncato, maculisque quatuor nigris circa vulvam, in trapezium postice lætius dispositis, ornatum: maculis omnibus nigris ad partem pilis testaceis, quibus vestitus est venter, occultis. In Var.  $\gamma$  macula ventris triangula in paria tria macularum parvarum divisa est: utrinque ad latus serie punctorum minutorum impressorum nigrorum circumdatus est venter. In Var.  $\delta$  venter totus testaceus. Vulva ex fovea constat sat magna, sed non profunda, ad rimam genitalem pertinenti, paullo longiore quam latiore, semi-elliptica fere, et septo longitudinali persecta: hoc septum postice triangulariter dilatatum est, foveam illam hic claudens et in margine posteriore foveis duabus minutis plerumque impressum.

*Mas ad.* Cephalothorax long. 5 millim., patella + tibia 4:ti paris fere 6 millim. Palpi tennes, testacei, parte tibiali duplo longiore quam latiore, partibus omnibus, lamina quoque, sub-testaceo-, non nigro-pilosis. Bulbus genitalis in latere inferiore, extus, dentem transverse positum sub-triangulum. *simplicem* ostendit. Abdominis dorsum supra fusco-testaceum, in lateribus nigro-fuscum, macula magna antica fusca usque ad medium dorsi pertinenti, postice angustata, dente parvo utrinquo munito, notatum; pone hanc maculam dorsum lineas 4—5 transversas tenues, leviter angulatas ostendit, quarum extremitates seriem utrinque macularum parvarum albicantium formant. Venter in exemplo unico a me viso (Var.  $\delta$ ) testaceus. Color præterea ut in ♀.

Tres feminas *adultas* (Var.  $\alpha$ ,  $\beta$ ,  $\gamma$ ) possideo, quarum unam ad Nicæam cepi, duas ex Italia obtinui; præterea marem adultum et feminas paucas juniores, ventre toto testaceo (Var.  $\delta$ ), ex Helvetia australi, a Cel. PAVESI communicatos, vidi. — *A. T. fabrikii*, cui ad colorem cephalothoracis sat similis est, distinguitur hæc species statura graciliore, mandibulis feminæ brevioribus quam sunt metatarsi pedum anticorum, dente simplici bulbi genitalis in ♂, cet. *A. T. inguilina* colore non rufescenti-cinereo, sed fusco vel fusco-testaceo, vittis marginalibus cephalothoracis optime definitis, clarius cinereo-testaceis, ab utraque specie pictura abdominis paullo alia, cephalothorace angustiore, pedibus longioribus, *tibia 4:ti paris* (non ut in feminis illorum breviora quam, sed) *æqua longa atque latitudine maxima cephalothoracis*, vulva majore et aliter conformata, cet.

belly, and particularly on the form and size of the black area which it frequently exhibits. The male of our Var.  $\alpha$  (with black belly), BLACKWALL has described under the name of *L. famelica*. *L. captans* WALCK. is our Var.  $\beta$ , distinguished by a triangular black spot on the pale belly. C. KOCH appears to have described this species under two separate names, *L. isabellina* and *L. famelica*: the first appears to me to represent a black-bellied specimen, in which the marking on the abdomen was indistinct or faded (*L. isabellina* C. KOCH is by SIMON loc. cit., p. 83, referred to *Tar. liguriensis*, which is a far larger spider than KOCH's species): *L. famelica* C. KOCH is, as also *L. vagabunda* LUC., decidedly a variety of the same species, with the under side of the abdomen pale-coloured. — *L. tarentulina* SAV. et AUD. (Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 363, Pl. IV, fig. 2), to which WALCKENAER, in Ins. Apt. I, p. 305, refers *L. radiata* LATR., does not belong to the species before us: it differs by the lateral bands on the cephalothorax being coarsely indented on the upper border, etc., and is more nearly related to the genuine Tarantulæ, *T. Apulicæ* (WALCK.), *T. melanogaster* (LATR.) etc., although it is considerably smaller than they.

(Pag. 509). 18. **L. pinetorum** [= *Tarentula pinetorum* THOR. 1856.]

*Syn.*: 1856. TARENTULA PINETORUM THOR., Rec. crit. Aran., p. 58, 111.

The marking on the back of the abdomen in the male *T. pinetorum* is very like that of *T. andrenivora* (*L. barbipes* WESTR.) ♂, which however has a pale-coloured belly, and an entirely different form of the tooth under the bulbus genitalis. From males of *T. aculeata* (CLERCK), NOB., or *L. tæniata* C. KOCH, with the upper part of the abdomen of a similar pattern, *T. pinetorum* ♂ can hardly be distinguished by any thing else than its black belly, and by the lamellar, transverse, inward-turned, almost triangular tooth under the outer side of the bulbus being somewhat larger and on its anterior side, along the base, provided with a projecting border or ledge, which is absent in *T. aculeata* ♂. This last mentioned spider is often as large as *T. pinetorum*: I have a few male specimens of *T. aculeata*, the cephalothorax of which is  $5\frac{1}{2}$  millim. long, while in others it is not more than 4 millim. The male's cephalothorax in *T. pinetorum* is as long as, or a trifle longer than, the patella + tibia of the 4<sup>th</sup> pair, its greatest breadth about  $\frac{1}{2}$  millim. more

than the length of the tibia of the 4<sup>th</sup> pair; this pair is somewhat more than three times as long as the cephalothorax. In one female that I have measured, the cephalothorax is  $5\frac{1}{4}$  millim. long and  $3\frac{3}{4}$  millim. broad; the tibia of the 4<sup>th</sup> pair is 3 millim., and the patella together with the tibia of that pair  $4\frac{3}{4}$  millim. *L. pinetorum* ♀ is distinguished from *T. aculeata* ♀ not only by its black belly and by the slightly different marking of the abdomen (Conf. WESTRING'S description), but also by its brownish-yellow colour having a tinge of green or olive, by its more distinct rings on the legs, which are shorter and coarser, by the mandibles being as long as the tibiæ of the 1<sup>st</sup> pair etc. From ♀ of *T. inquilina*, which also has a black belly, it is easily distinguished by the form of the vulva, which in *T. pinetorum* consists of a very small triangular fovea rounded at the anterior extremity, with a low narrow septum at the bottom, and terminated posteriorly by a transverse costa depressed in the middle, almost exactly as in *T. aculeata*, *trabalis*, *pulverulenta* and *cuneata*.

Another, somewhat smaller, but nearly related species with black belly, is *Lycosa albo-fasciata* BRULLÉ 1832<sup>1)</sup> or *L. numida* LUC.<sup>2)</sup>, which is identical with *L. sagittata* C. KOCH<sup>3)</sup> and, according to original specimens from Dalmatia, which I have received from Dr REDTENBACHER, with the spider which DOLESCHALL<sup>4)</sup> mentions under the name of "*L. ocellaris* ROSSI". To the same species probably belongs *L. punctiventris* DOLESCH.<sup>5)</sup>, and without a doubt also *L. albo-cincta* BLACKW.<sup>6)</sup> The black belly of *T. albo-fasciata* or *numida* has how-

1) Expéd. scient. de Morée, Zool., II, p. 54, Pl. XXVIII, fig. 7. " . . . Céphalothorax parcouru dans toute sa longueur, à partir des deux yeux de la seconde rangée, par une bande assez large de poils grisâtres; les côtés sont noirs et couverts de poils d'un gris roux. Abdomen noir et velu, orné d'une large bande de la couleur de celle du céphalothorax, dont elle semble être la continuation; cette bande en renferme à sa base une autre de couleur noire et de la longueur du tiers de l'abdomen. Chacun des côtés de l'abdomen est marqué d'une pareille bande, plus étroite, qui s'élargit un peu à l'extrémité; les poils de ces bandes latérales sont beaucoup plus blancs que ceux de la bande du milieu: toutes les trois aboutissent, sans se toucher cependant, à l'extrémité de l'abdomen, un peu en dessous. La pièce sternale est d'un noir luisant. . . Mâle." (BRULLÉ, loc. cit.).

2) Explor. de l'Algérie, Arachn., p. 114, Pl. 3, fig. 5.

3) Die Arachn., XIV, p. 177, Tab. CCCCXCIX, fig. 1395. — *L. sagittata* HENTZ (Descr. and fig. of the Aran. of the U. S., in Boston Journ. of Nat. Hist., IV, p. 391, Pl. XVIII, figg. 3, 4) is an entirely different species, but probably also a *Tarentula*.

4) System. Verzeichn. etc., p. 628 (9).

5) Ibid., p. 641 (22).

6) Notes on a collect. of Spid. made in Sicily. . . by E. P. WRIGHT, with a list of species and descr. etc. by J. BLACKWALL, in Ann. and Mag. of Nat. Hist.,

ever almost always behind the rima genitalis two small white stripes, converging backwards, and, behind these, usually also two pair of white points, which marks sometimes combine so as to form a white V. The male's abdomen has a white band on each side; along the black back it has a long, narrow, lancet-formed white area enclosing at its base a shorter lancet-like black band, quite as in the commonest form of *T. aculeata* ♂; as in that species, the bulbus has beneath, on the outer side, a little triangular, inward-directed, compressed tooth. In the ♀ of *T. albo-fasciata* (*numida*) the marking on the back of the abdomen is sometimes similar to that in the male, but *in general* she has quite a different appearance, and, as far as the marking of the upper part of the body is concerned, closely resembles *T. andrenivora* or *barbipes*; but the colour is more of a reddish brown, not dirt-grey, and she may moreover be immediately distinguished by the colour of the belly, which is black, as in the male. The vulva is formed by a little short, deep fovea truncated in front, but dilated behind, and there enclosing a costa, which extends itself forwards as a short low septum in the bottom of the fovea. This in southern Europe and northern Africa widely spread species I have found plentiful at Nice.

(Pag. 511.) 19. **L. barbipes** [= *Tarentula andrenivora* (WALCK.) 1825, *Var.*]

*Forma principalis:*

- Syn.*: 1825. *LYCOSA ANDRENIVORA* WALCK., *Faune Franç., Arachn.*, p. 23, Pl. 3, figg. 2, 3.  
 1831. " *SABULOSA* HAHN, *Die Arachn.*, I, p. 16, Tab. V, fig. 13.  
 1833. " *INQUILINA* C. KOCH, *in* HERR.-SCHÄFF., *Deutschl. Ins.*, 120, 2, 3.  
 1848. " (*TARANTULA*) *INQUILINA* ID., *Die Arachn.*, XIV, p. 163, Tab. CCCXCXVII, figg. 1387, 1388.  
 1867. *TARANTULA INQUILINA* OHL., *Aran. d. Prov. Preuss.*, p. 139.

*Var. β, barbipes:*

1833. *LYCOSA BARBIPES* SUND., *Sv. Spindl. Beskr.*, *in* *Vet.-Akad. Handl.* f. 1832, p. 184.  
 1833. " *CRUCIATA* ID., *ibid.*, p. 185.

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4 Ser., V, 1870, p. 394 (4), Pl. VIII, fig. 1. — The last line of the page here cited does not belong to it, but ought to be moved so as to become the last line of p. 398 (8), in the description of *Philodr. lepidus* BLACKW.

1844. *LYCOSA OCREATA* HENTZ, Descr. and fig. of the Aran. of the U. S., in Boston Journ. of Nat. Hist., IV, p. 391, Pl. XVIII, fig. 5.
1856. *TARENTULA BARBIPES* THOR., Rec. crit. Aran., p. 40.
1861. *LYCOSA ANDRENIVORA* BLACKW., Spid. of Gr. Brit., I, p. 20, Pl. I, fig. 4.
1870. *TARANTULA BARBIPES* ZIMMERM., Verzeichn. d. Spinn. v. Niesky, p. 44.

After examining the figures given by WALCKENAER in the Faune Franç. of his *Lyc. andrenivora*, I am perfectly satisfied that BLACKWALL has done right in assigning the specific name of *andrenivora* WALCK. to the spider before us. In that of WALCKENAER's figures, which represents the *male*, the tibiae of the first pair are not, it is true, *thickened*, as they are in *L. andrenivora* BLACKW. and *L. barbipes* WESTR., but they are not so either in specimens of *L. inquilina* C. KOCH from Bavaria, which I have received from Dr L. KOCH, and which in every other respect agree with the Swedish specimens of *L. barbipes* WESTR. and *L. andrenivora* BLACKW., of which last CAMBRIDGE has been kind enough to send me ♂ and ♀ *ad.* from England. Dr ZIMMERMANN has also favoured me with a ♂ and ♀ *ad.* of his *T. barbipes*, which accurately agrees with the form occurring in Sweden. Between the females of the spiders, which BLACKWALL, WESTRING and C. KOCH describe under the above names, I can discover no difference whatever. It therefore appears to me certain, *that the form and hairy covering of the male's fore-tibiae vary* in this species: in the northern specimens, as also in those from England and Silesia, these tibiae are *considerably thicker* than those of the succeeding pairs, (but *cylindrical*, not egg-formed, as in *T. cuneata* ♂) and *thickly covered with black hair*, especially on the under side, whereas these tibiae in south-German, and probably also in French and south-European males generally, are *little, if at all, thickened*, and *with the hairy covering but little thicker than that of the succeeding pairs*. In the males of a few other species, f. inst. *T. pulverulenta* and *T. aculeata*, I have observed that the fore-tibiae are often a little thicker in specimens from the most northern localities of Scandinavia, than in individuals from other parts of Europe.

From SIMON I have received a ♀ *jun.* from Paris under the name of *L. andrenivora* WALCK., which I cannot distinguish from *L. barbipes* WESTR. — OHLERT's description of "*Tar. inquilina*" appears to be only an extract from C. KOCH's. — The figure given by HENTZ of his *Lycosa ocreata* bears so strong a resemblance to our Swedish "*Lyc. barbipes*", that I could not but include that American spider among the synonyms of the latter.

In Faune Franç., loc. cit., WALCKENAER cites under *L. andrenivora*: "WALCK., Mémoires pour servir à l'histoire d. Abeilles solitaires [qui composent le genre *Halicta*], p. 89" (1817); but as I have not seen this work, and am not sure that WALCKENAER has there employed the name *L. andrenivora*, I have not dared to give 1817 as the date of the name.

*L. barbipes* SUND. is by WALCKENAER erroneously referred to his *L. armillata* (H. N. d. Ins. Apt., I, 317), and by C. KOCH to his *L. clavipes* (Die Arachn., XIV, p. 190), both which are identical with *T. cuneata* (CLERCK). WALCKENAER moreover erroneously classes under his *L. andrenivora*: *Ar. pulverulentus* CLERCK ♀. Neither does his synonym "*Ar. carinata* OLIV." belong to this species: OLIVIER has only rechristened as *Ar. carinata* the spider with CLERCK had called *Ar. pulverulentus*. *Ar. pulverulentus* CLERCK is = *L. graminicola* WALCK. A third species here taken up by WALCKENAER, is "*Lycose entrecoupée* LATR." <sup>1)</sup>, the description of which I have not had an opportunity of seeing. *L. alpica* C. KOCH <sup>2)</sup>, inserted as a synonym by WALCKENAER <sup>3)</sup> both under *L. andrenivora* and *L. agilis*, appears also to be another species, more resembling *T. meridiana* (*L. nivalis* C. KOCH) and *T. miniata*. — *L. albo-fasciata* BRULLÉ <sup>4)</sup>, which WALCKENAER in the same work cites under *L. andrenivora*, is also assuredly different, and no doubt identical with *L. numida* LUC. (*L. sagittata* C. KOCH), on which see above, p. 317.

*Ar. inquilinus* CLERCK, which C. KOCH supposed to be identical with his *L. inquilina*, is the same as his *L. fabrilis*: vid. sup., p. 310 et seq. *L. sabulosa* HAHN is by WALCKENAER (loc. cit., p. 307) erroneously referred to *L. fabrilis* WALCK.: its abdomen is stated to be on the under side "light reddish yellow," not black, as in "*L. fabrilis*". — Of *Ar. aculeatus* CLERCK and *Lyc. aculeata* SUND., which are taken up by C. KOCH under this species, the former undoubtedly belongs to his *L. taniata*, the latter to his *L. nivalis* or *T. meridiana* (HAHN), NOB., on which last-mentioned species see above, p. 274, under *L. nemoralis* WESTR. — *L. lugubris* HAHN <sup>5)</sup> is considered by C. KOCH as a variety of *L. inquilina* C. KOCH, but should rather be identified with the true *T. inquilina* (CLERCK). See above, p. 313.

1) Nouv. Dict. d'Hist. Nat., 2<sup>e</sup> Éd., XVIII, p. 295 (sec. WALCK.).

2) Die Arachn., XIV, p. 194, Tab. DII, fig. 1405.

3) H. N. d. Ins. Apt., I, p. 316, 318.

4) Expéd. scient. de Morée, Zool., II, p. 54, Pl. XXVIII, fig. 7.

5) Die Arachn., I, p. 19, Tab. V, fig. 15.

*L. cruciata* SUND. is, as WESTRING has justly supposed, a by no means uncommon variety of *T. andrenivora* or *barbipes*, distinguished by the dark marking along the middle of the abdomen being within a broad, lancet-formed, greyish white vitta extending along the whole back of the abdomen.

The male's bulbus genitalis has in *T. andrenivora*, on the under side, at the outer margin, a small transverse lamella, directed obliquely forward; *the outer angle of the the extremity of this lamella extends into a slender spine, curved upwards and backwards.* This spine is compressed, and, when viewed from its broad side, angularly curved, truncated at its apex, with the edge that is turned towards the bulbus of a paler colour. By this spine the male of *T. andrenivora* is easily distinguished from that of every other similar species, that I know of. The inner corner of the extremity of the above named lamella has the form of an acute angle or little tooth. The under side of the bulbus, at the apex, exhibits a large, round protuberance. The vulva is formed by a little depression or fovea, *the anterior margin of which is incrassated, and divided by a central depression into two tubercles.* The fovea is limited behind by a costa or plate with two other smaller and more widely separated tubercles. As regards the marking on the back of the abdomen the female is almost exactly like *T. fabrilis* (CLERCK), but the marking in the latter is of a clearer white, and more especially the white spots arranged in two lines on the hinder part of the back are larger and more distinct. *T. fabrilis* is moreover much larger, and has a *black belly* (not greyish, like *T. andrenivora*) — *T. albo-fasciata* (BRULLÉ), the female of which has often much resemblance with *T. andrenivora* ♀. may also be distinguished by its black belly. Concerning *T. albo-fasciata*, see above p. 317.

(Pag. 513.) 20. *L. trabalis* [= *Tarentula trabalis* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS TRABALIS CLERCK, Sv. Spindl., p. 97, Pl. 4, tab. 9.  
 1789. ARANEA OBSCURA OLIV., Encycl. Méth., IV, p. 218.  
 1802. " VORAX WALCK., Faune Par., II, p. 238 (*salt. ad part.*).  
 1805. LYCOSA " ID., Tabl. d. Aran., p. 13 (*salt. ad part.*).  
 1825. " " ID., Faune Franç., Arachn., p. 21 (*excl. salt. "Var. 2"*).  
 1831. " " HAHN, Die Arachn., I, p. 105, Tab. XXVI, fig. 78.  
 1833. " " SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 183 (= ♂).  
 1833. " TRABALIS ID., *ibid.*, p. 182 (*ad part.*: ♀; non ♂).

1834. *LYCOSA CUNEATA* C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 122  
17, 18 (sec. KOCH, Die Arachn.).  
1848. „ (*TARANTULA*) *VORAX* ID., Die Arachn., XIV, p. 173, Tab.  
CCCCXCIX, figg. 1393, 1394.  
1851. „ *TRABALIS* WESTR., Förteckn. etc., p. 53.  
1856. *TARENTULA TRABALIS* THOR., Rec. crit. Aran., p. 61.  
1867. *TARANTULA VORAX* OHL., Aran. d. Prov. Preuss., p. 140.

As regards *Aran. trabalis* CLERCK, which C. KOCH has erroneously taken up under his *Trochosa trabalis* (*T. terricola* THOR.), see Rec. crit., loc. cit. — HAHN's *L. vorax* ought in my opinion to be aggregated to the species before us, and not to *T. pulverulenta* (CLERCK) = *L. cuneata* C. KOCH (Die Arachn., XIV, p. 183), to which it is referred by C. KOCH. HAHN's species in fact has, according to the figure, particularly distinct pale lateral bands on the cephalothorax, which is even said to be *yellowish or whitish brown, with two broad, dark, longitudinal bands*. The alleged size of the female, "5 lines," agrees better with *T. trabalis* (CLERCK), NOB., than either with *Ar. pulverulentus* CLERCK, cited by HAHN, or with *Ar. cuneatus* CLERCK (*L. clavipes* C. KOCH), which last HAHN's figure else closely resembles.

"Var. 2" of *L. vorax* WALCK. is without question the male of the next following species, *L. tæniata* WESTR. Of all the names, indicating together at least *nine* different species, some of the genus *Tarentula*, others of *Lycosa*, which WALCKENAER in H. N. d. Ins. Apt. (I, p. 313, 314; IV, p. 392, 393) has taken up under his *L. vorax*, only *Ar. trabalis* CLERCK, *Lyc. vorax* HAHN, *L. vorax* SUND., *L. trabalis* ID. ♀, and *L. cuneata* C. KOCH in HERR.-SCHÆFF., Deutschl. Ins., belong to *L. trabalis* (CLERCK), WESTR.; *perhaps* also *L. flavolineata* LATR., described, according to WALCKENAER, in Nouv. Dict. d'Hist. Nat., 2<sup>e</sup> Éd., XVIII, p. 296, but the description of which I have not seen, should be referred to this species. To give account of each of WALCKENAER's other references would be too tedious a proceeding; by means of the index at the end of this work the reader may easily turn to the places, where I have expressed my opinions regarding them. Here I need only remark, that also *Lyc. bifasciata* C. KOCH — of which Dr L. KOCH has kindly favoured me with specimens — is a species totally different from all the other species of *Lycosa* sensu strict. described C. KOCH.

*T. trabalis* (CLERCK), of which C. KOCH has, in Die Arachniden, given particularly good figures, cannot easily be confounded with any other species, unless it be the next following, *L. tæniata* WESTR. or



*T. aculeata* (CLERCK), NOB., from which however it may easily be distinguished by the cephalothorax having in both sexes, besides the pale central band, conspicuous and sharply defined, often geminated, *brownish- or greyish-yellow lateral bands*, while the sides of the cephalothorax in *T. aculeata* either have very indistinct pale lateral bands, or, as is usually the case, only become *gradually* paler towards the borders, which in the *male* however often at the extreme edge, but only along a very narrow line, are covered with white hair. *T. trabalis* may be easily distinguished from *T. pulverulenta* and *T. cuneata* by its far greater size: the cephalothorax in ♂ being at least  $4\frac{1}{2}$ —5 millim, in ♀  $5$ — $5\frac{1}{2}$  millim. long. By having the belly thickly covered with greyish or yellowish hair, *T. trabalis* may without difficulty be distinguished from *T. pinetorum*, which has a black belly. As regards the organs of copulation in *T. trabalis*, see the next following species.

(Pag. 515.) 21. **L. tæniata** [= ***Tarentula aculeata*** (CLERCK) 1757].

Syn.: 1757. ARANEUS ACULEATUS CLERCK, Sv. Spindl., p. 87, Pl. 4, tab. 3 (= Var. ♂).

?1757. " TRABALIS Var.? ID., ibid., p. 98, Pl. 4, tab. 10.

?1763. ARANEA LISTERI SCOP., Ent. Carn., p. 397.

1825. LYCOSA VORAX WALCK., Faune Franç., Arachn., p. 22 (*ad part.*: "Var. 2", = ♂ *ad.*)

1831. " CURSOR HAHN., Die Arachn., I, p. 17, Tab. V, fig. 14 (= Var. γ).

1833. " NIVALIS SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 184.

1833. " TÆNIATA C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 131, 16, 17 (*sec.* KOCH, Die Arachn.).

?1837. " TRUCIDATORIA WALCK., H. N. d. Ins. Apt., I, p. 311.

1845. " (TARANTULA) TÆNIATA C. KOCH, Die Arachn., XIV, p. 178, Tab. D, figg. 1396, 1397.

1856. TARENTULA TÆNIATA THOR., Rec. crit. Aran., p. 61.

1856. " CURSOR ID., ibid., p. 117 (= Var. γ).

1861. LYCOSA CURSOR WESTR., Aran. Suec., p. 517 (= Var. γ).

1867. TARANTULA TÆNIATA OHL., Aran. d. Prov. Preuss., p. 140.

1868. TARENTULA ACULEATA THOR., in EISEN et STRUXB., Om Gotska Sandön, in Öfvers. af Vet.-Akad. Förhandl., XXV, (1868), p. 379.

Whether the spider, which CLERCK has described and figured p. 98, Pl. 4, t. 10, suspecting it to be a Var. of "*Ar. trabalis*", belong really, as I have in my Rec. crit. supposed, to *T. trabalis*, or to *T. pulveru-*

*lenta*, to which others have supposed it to belong, it is probably not possible with any certainty to decide; but as that spider did not receive from CLERCK any separate specific name, the question is of very little consequence. — Of the synonyms which C. KOCH has taken up under his *L. tæniata*, *L. pulverulenta* SUND. no more belongs to it than *Ar. nivalis* CLERCK, which SUNDEVALL cites under his *L. nivalis*. *L. meridiana* HAHN, which both SUNDEVALL and WESTRING have with a note of interrogation affiliated to this species, is undoubtedly the same spider, which WESTRING calls *L. nemoralis* (= *L. nivalis* C. KOCH), concerning which vid. sup., p. 274. WALCKENAER's *L. trucidatoria*, under which *L. tæniata* C. KOCH is cited, probably belongs, as KOCH and WESTRING suppose, to this species, although the description does not in all respects suit very well; I have been favoured by SIMON with a large female specimen of *L. tæniata* WESTR. from Paris, with very distinctly annulated thighs, under the name of *J. trucidatoria* WALCK. *L. agretyca* SAV. et AUD., described and figured in the Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 369, Pl. IV, fig. 6, which WALCKENAER inserts among the synonyms of his *J. trucidatoria*, and which even CAMBRIDGE<sup>1)</sup> supposes to be synonymous with that species, cannot however belong to the species now before us. On the other hand the males, which WALCKENAER describes under the name of "*L. vorax* Var. 2", and which, he says, have "le corselet presque entièrement noir et les deux paires de pattes antérieures plus noires" (Ins. Apt., I, p. 314), appear to me to belong to *L. tæniata*, and not to *L. vorax* (*T. trabalis*). — Bavarian specimens of both sexes of WESTRING's *L. tæniata* have been sent to me by Dr L. KOCH under the name of *L. tæniata* C. KOCH.

Now as regards *Ar. aculeatus* CLERCK, I have already in Rec. crit. Aran., p. 46, expressed my conviction, that it is a variety of the spider called by C. KOCH *L. tæniata*. That it is one of our largest Lycosoidæ, is evident as well from CLERCK's figure, as from the circumstance, that the species has received its place between *Ar. fabrilis* and *Ar. inquilinus*, the two largest *Tarentula*-species met with in Sweden ("*L. tæniata*" is not always so small as WESTRING and KOCH state: I have males of which the cephalothorax measures 5 1/2 millim. in length). The large spines on the thighs, of which CLERCK speaks, are of course nothing else than the two usual, more upright

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1) Notes on some Spiders and Scorpions from St. Helena, in Proceed. of the Zool. Soc. of London, 1869, p. 542.

and longer spines situated on the upper side of the thighs, which CLERCK in the other species has not observed, but has chanced to see in his *Ar. aculeatus*: — that any Lycosoid exists, in which these spines really are, as CLERCK states, "five or six times longer and thicker" than the other spines of the legs, no one probably will consider as likely. The size of "*Ar. aculeatus*" forbids our referring that spider to *T. meridiana* HAHN (*L. aculeata* SUND.), to which SUNDEVALL reckons it. By C. KOCH it is classed under *T. andrenivora* (*L. inquilina* C. KOCH). WESTRING on the other hand (Aran. Suec., p. 507) considers *Ar. aculeatus* as a monstrous form either of *T. fabrilis* or *T. inquilina* (CLERCK). But CLERCK's figure bears not the slightest resemblance either to *T. andrenivora* or *T. fabrilis*; as for *T. inquilina*, as CLERCK has described it under two other names, *Ar. inquilinus* and *Ar. nivalis*, it is hardly credible that he would take it up again under a third appellation; and moreover I cannot see any especial resemblance between *T. inquilina* and CLERCK's figure of *Ar. aculeatus*. When *T. inquilina* is excluded, there can hardly be found any other Swedish Lycosoid, than *L. tæniata* WESTR., to which *Ar. aculeatus* can be referred; and I can discover nothing that militates against the supposition, that *Ar. aculeatus* is a variety of the here in Upland common *L. tæniata*, in which the upper part of the abdomen is of an almost uniform grey colour, without marking. This variety I in 1868 (loc. cit.) called "Var.  $\beta$ " of the species. In the commonest variety, or chief form of the species, "Var.  $\alpha$ ", the abdomen has, as is known, a long, narrow, lancet-formed, pale, longitudinal band, enclosing in the fore part a lancet-formed dark spot: sometimes this spot is rather indistinct, and the longitudinal band not so sharply defined, in which cases the chief form passes into the Var.  $\beta$ ; if the band be resolved by transversal, dark, angular marks into a series of spots, of which the first is usually in the form of a large  $\Lambda$ , and the next-following spot or spots are longitudinally bisected, we have the variety described by WESTRING under the name of *L. cursor*, and which I have called "Var.  $\gamma$ ." This variety is undoubtedly identical with *L. cursor* HAHN<sup>1)</sup>. I have

1) I have received from SIMON a spider from France, which he takes to be *L. cursor* HAHN. It is beyond all comparison smaller than HAHN's species, of which the male is stated to be 5 and the female  $6\frac{1}{2}$  lines long, and which is certainly different from the spider I have received from SIMON. As the species appears to be new, it is as well to describe it here. I call it *T. Simonis*, after the zealous arachnologist who has discovered it, and whom I have to thank for many valuable communications.

also several transition-forms between this and the two other principal varieties, and HAHN justly observes, that but few specimens of

*Tarentula Simonis* N., nigro-fusca, pedibus saltem extus clarioribus, cephalo-race vittis tribus longitudinalibus clarioribus cinereo-pilosis, abdominis dorso utrinque maculis lineisve obliquis flavis, binis oppositis, picto, quarum anteriores plus minus disjunctæ sunt, posteriores in maculas vel lineas transversas angulatas binæ conjunctæ (et in ♀, saltem interdum, in vittam longitudinalem confluentes); ventre cinereo-piloso; bulbo genitali subter lamina parva apice late truncata instructo. — ♂♀ ad. Long. ♂ c:a 6, ♀ c:a 7½ millim.

*Fem.* Cephalothorax 3½ millim. longus, 2¼ latus, longitudine patellam + tibiam 4:ti paris ½ millim., latitudine vero longitudinem tibiæ ejusdem paris ¼ millim. superans; nigro-fuscus, in lateribus sub-luteo-pubescent, vitta clariore media lata aliaque supra-marginali utrinque clarioribus pilisque cinereis dense vestitis, ipso margine fusciori. Sternum nigrum, nitidum, parce nigro-pilosum. Mandibulæ nigricantes, basi et ad apicem intus sub-testaceæ, basi testaceo-pilosæ. Maxillæ et labium fusco-testacea. Palpi et pedes testaceo-fusci, fusco-sub-maculati, vix distincte annulati, cinereo-vel luteo-pilosi; pedes 4:ti paris cephalothorace 3:plo longiores (10½ millim.; tibia 2, patella cum tibia 3 millim.); 1:mi paris pedes 7½ millim. longi. Abdomen (in exemplo a me viso, detrito) nigro-fuscum, maculis in dorso antice duabus magnis, oblongis, fere anguste ovatis, flavis, Δ magnum et crassum quasi formantibus; paullo pone et inter has maculas lineæ duæ flavæ et sub-cuneatæ Δ alterum, minus et multo angustius, antice apertum formant; pone quas lineas vitta flava a medio dorsi ad mamillas extensa est, in lateribus dentata et ex maculis paucis minoribus <-formibus, plus minus confluentibus composita. Latera abdominis inferius et venter testaceo-fusca, pilis sub-cinereis vestita. Mamillæ fusco-testaceæ. Vulva ex fovea semi-elliptica fere, parum profunda constat, costa angusta limitata et aream paullo elevatam sive laminam planam, nitidam, magnam amplectenti, quæ lamina costa brevi cum margine antico vulvæ conjuncta est.

*Mas.* Cephalothorax 3¼ millim. longus, 2¼ latus; longitudine patellam cum tibia 4:ti paris æquat, latitudine longitudinem tibiæ ejusdem paris paullo superat. Palpi fusci, lamina obscuriore; bulbus genitalis subter, ad latus exterius, prope medium, lamina parva cornea nigricanti, transverse posita instructus, *cujus apex late truncatus est, angulo exteriori recto, interiori acuto.* Pedes 4:ti paris 11 millim. (cephalothorace c:a 3⅓ longiores), 1:mi paris 8¾ millim. longi; fusci, cinereo-pilosi, femoribus obscurioribus, coxis subter nigro-fusci, ad basin clarioribus. Abdomen nigrum, dorso secundum medium pilis cinereis vestitum; utrinque in dorso utrinque lineæ flavescences obliquæ seriem formant et binæ oppositæ sunt: harum linearum tria paria anteriora apicibus non conjuncta sunt, sequentes vero, magis transversæ, lineas angulatas binæ formant, interstitiis angustis fuscis inter se separatas. Venter pilis sub-cinereis dense vestitus. Præterea in marem ea conveniunt, quæ de femina diximus.

Exemplum adultum utriusque sexus, ad Lutetiam Parisiorum captum, benigne mecum communicavit Cel. E. SIMON. — A *T. aculeata* Var. β (*L. cursore* HAHN) differt hæc species magnitudine multo minore, partibus copulationis aliter conformatis, cephalothoracis vittis lateralibus distinctioribus meliusque limitatis, pictura abdominis purius flava, cet.

his *L. cursor* are to be found, of which the colour is exactly alike. Particularly large and fine specimens of *L. tæniata*, or rather *T. aculeata* (CLERCK) — for such I consider to be the proper appellation of the species —, among which is a ♀ *ad.* of Var.  $\gamma$  (*cursor*) 14 millim. long, have been sent to me from Gotland and Fårö, where the species seems to be very common. I have also received through Prof. TH. FRIES a few large specimens from Alten in the Norwegian Finnmark. WESTRING had only seen half-developed specimens of his *L. cursor*, otherwise he would instantly have perceived, that it was not a separate species, but only a variety of *L. tæniata*, as, even as it was, he suspected.

From *T. pulverulenta* and *T. cuneata*, in which the cephalothorax probably never reaches a length of  $4\frac{1}{2}$  millim., *T. aculeata* or *tæniata* is at once distinguished by its greater size: the cephalothorax is in ♂  $4\frac{1}{2}$ — $5\frac{1}{2}$  millim., in ♀  $4\frac{3}{4}$ — $5\frac{3}{4}$  millim. The legs are also longer in *T. aculeata* than in the above-named two species, in ♂ near  $3\frac{1}{2}$  times, in ♀  $3\frac{1}{3}$  times longer than the cephalothorax, which is little or nothing longer than the tibia and patella of the 4<sup>th</sup> pair taken together; the breadth of the cephalothorax is in ♂  $\frac{1}{2}$ — $\frac{3}{4}$  millim., in ♀ but little, larger than the length of the tibia of the same pair. In *T. pulverulenta* the 4<sup>th</sup> pair of legs, both in ♂ and ♀, is very nearly 3 times as long as the cephalothorax, which is  $\frac{1}{4}$  millim. longer than tibia + patella of the 4<sup>th</sup> pair, and the breadth of which is about  $\frac{3}{4}$  millim. greater than the length of the tibia of the same pair. *T. cuneata* has still shorter legs, the 4<sup>th</sup> pair being only about  $2\frac{3}{4}$  (♂) or  $2\frac{3}{5}$  times (♀) as long as the cephalothorax, the length of which exceeds by  $\frac{1}{2}$  millim. that of the tibia and patella of the said pair united; its breadth is about  $\frac{3}{4}$  millim. greater than the length of the tibia of the 4<sup>th</sup> pair. The male *T. cuneata* differs from all other species, with which I am acquainted, by the egg-shaped incrassation of its thighs.

The sexual organs in *T. tæniata*, *T. aculeata*, *T. pulverulenta* and *T. cuneata* are so similar, as scarcely to offer any observable or trustworthy marks of distinction between these species. The vulva is, in all four, formed of a little oblong, tolerably deep, almost semi-elliptic fovea somewhat broader behind, and there enclosing a small, transverse costa or plate, more or less visibly depressed in the middle, and usually exhibiting two small depressed points on the posterior margin; this costa is connected with a low narrow septum at the bottom of the fovea. The bulbus has on the under side, outwards, a trans-

versally situated, trapezoidal little lamella, the under and, in general, only visible part of which has the form a compressed triangular tooth which is higher inwards. The organs of copulation in *T. pinetorum* differ but little. See that species above, p. 317.

(Pag. 519.) 22. **L. cursor** [= *Tarentula aculeata* (CLERCK) 1757, *Var.*].

Vid. preced. spec., *L. taniata* WESTR.

(Pag. 518.) 23. **L. pulverulenta** [= *Tarentula pulverulenta* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS PULVERULENTUS CLERCK, Sv. Spindl., p. 93, Pl. 4, tab. 6.  
 1789. ARANEA CARINATA OLIV., Encycl. Méth., IV, p. 218.  
 1825. LYCOSA GRAMINICOLA WALCK., Faune Franç., Arachn., p. 21.  
 ?1829. " EPHIPIUM HAHN, Monogr. Aran., 5, Tab. 1, fig. A.  
 1833. " PULVERULENTA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 186.  
 1834. " GASTEINENSIS C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 132, 21, 22 (sec. KOCH, Die Arachn.).  
 1841. " RAPAX BLACKW., The differ. in the numb. of eyes, *cet.*, p. 609.  
 1848. " (TARANTULA) CUNEATA C. KOCH, Die Arachn., XIV, p. 183, Tab. DI, figg. 1399, 1400.  
 1848. " " GASTEINENSIS ID., *ibid.*, p. 187, Tab. DI, figg. 1401, 1402.  
 1856. TARENTULA PULVERULENTA THOR., Rec. crit. Aran., p. 57.  
 1861. LYCOSA RAPAX BLACKW., Spid. of Gr. Brit., I, p. 21, Pl. I, fig. 5.  
 1870. TARANTULA PULVERULENTA ZIMMERM., Verzeichn. d. Spinn. v. Niesky, p. 43.

WALCKENAER and C. KOCH erroneously aggregate *Ar. cuneatus* CLERCK and *Lyc. cuneata* SUND. to this species instead of the following, to which they both, as well ♂ as ♀, belong: Conf. Rec. crit., p. 62. On the other hand WALCKENAER and C. KOCH do not refer, as they ought to do, *Ar. pulverulentus* CLERCK to WESTRING's species here before us, but WALCKENAER takes up the male under *L. vorax* (*T. trabalis*) and the female under *L. andrenivora*; C. KOCH also refers *L. pulverulenta* SUND. to *L. vorax* or *T. trabalis*, which is equally erroneous. The *Ar. pulverulentus* or *Lyc. (Tar.) pulverulenta* of the Swedish Naturalists is really the same spider, which WALCKENAER calls *L. graminicola*, and C. KOCH in Die Arachn. *L. cuneata* (= *L. rapax* BLACKW.). I have been favoured by Dr L. KOCH with speci-

mens from Bavaria of this Westringian species under the name of *L. cuneata* C. KOCH, and CAMBRIDGE has supplied me with English specimens of *L. rapax* BLACKW. — *L. Gasteinensis* C. KOCH is without a doubt the same species as his *L. cuneata*: a tooth or angle on each side of the dark lancet-like spot on the abdomen, whereby *L. Gasteinensis* is said to be distinguished from *L. cuneata*, is usually found even in the Swedish specimens, as also the oblique, alternating dark and pale line on the sides of the abdomen, which are shown in C. KOCH's figure of *L. Gasteinensis* ♀. One of the specimens of *L. cuneata* C. KOCH, which I have received from L. KOCH, belongs, according to these characteristics, to *T. Gasteinensis*, but differs quite as little from *T. pulverulenta*, as do the specimens of *L. cuneata* C. KOCH, that are without the tooth on the spot on the back of the abdomen. ZIMMERMANN also places *L. Gasteinensis* under *T. pulverulenta*, whereas AUSSERER (Die Arachn. Tirols, I, p. 153) considers it to represent a variety of *T. trabalis*, which is certainly wrong. See Rec. crit. Aran., p. 57. — *L. cuneata* C. KOCH in HERR.-SCHÄFF., Deutschl. Ins., 122, 17, 18, does not belong to this species, but to *T. trabalis* (*L. vorax* C. KOCH), according to C. KOCH himself.

*Lyc. ephippium* HAHN, which is said to be found "in marshy places", is a very uncertain synonym, but it can however hardly be any other than either *T. pulverulenta*, to which it is referred by C. KOCH, or else possibly *T. cuneata*. *L. vorax* HAHN on the other hand, which C. KOCH aggregates to this species, belongs most probably to *T. trabalis*. Vid. supr., p. 322.

*T. pulverulenta* is without difficulty distinguished from *T. trabalis* and *T. aculeata* (*L. tæniata*) by its smaller size, and from the first by the absence of the pale, sharply defined lateral bands at the margins of the cephalothorax, which distinguish *T. trabalis*, both ♂ and ♀: generally speaking the female only of *T. pulverulenta* has lateral bands, which are however far less distinct, and of a dark reddish brown colour. The male is distinguished from the about equal-sized *T. cuneata* by its fore-tibiæ, which are of the ordinary form, little, if at all, thicker than the other tibiæ: the females on the contrary are often very difficult to distinguish. The comparatively longer legs (see above, p. 327), the colour approaching more nearly to brown than grey, as also the more indistinct lateral bands on the cephalothorax, do nevertheless distinguish *T. pulverulenta* ♀ from the

female of *T. cuneata*. As regards the organs of copulation, see above, p. 327.

(Pag. 521.) 24. *L. cuneata* [= *Tarentula cuneata* (CLERCK) 1757].

- Syn.: 1757. ARANEUS CUNEATUS CLERCK, Sv. Spindl, p. 99, Pl. 4, tab. 11.  
 1833. LYCOSA CUNEATA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 187.  
 1834. " CLAVIPES C. KOCH, in HERR.-SCHÄFF., Deutschl. Ins., 122, 19, 20 (sec. KOCH, Die Arachn.).  
 1837. " ARMILLATA WALCK., H. N. d. Ins. Apt., I, p. 317.  
 1848. " (TARANTULA) CLAVIPES C. KOCH, Die Arachn., XIV, p. 190, Tab. DII, figg. 1403, 1404.  
 1856. TARENTULA CUNEATA THOR., Rec. crit. Aran., p. 62.  
 1867. TARANTULA CLAVIPES OHL., Aran. d. Prov. Preuss., p. 141.  
 1871. LYCOSA BARBIPES CAMBR., Descr. of some Brit. Spid., cet., in Transact. of the Linn. Soc., XXVII, p. 398.

Respecting WALCKENAER'S and C. KOCH'S views with regard to *Ar. cuneatus* CLERCK and *Lyc. cuneata* SUND., see the preceding species. *L. barbipes* SUND., which the same authors refer to the species before us, does not belong to it, but is the northern form of *L. andrenivora* WALCK. (*L. inquilina* C. KOCH), which is distinguished by the male's having incrassated fore-tibiæ: these tibiæ are however cylindrical, whereas those of "*L. armillata*" or "*clavipes*" are egg-shaped, with an oblique, transverse depression at the sides, which depression is absent in "*L. barbipes*." Conf. *L. barbipes* WESTR. above, p. 319. — As regards the organs of copulation and the characteristics whereby *T. cuneata* (CLERCK) is most easily distinguished from the forms nearly allied to it, see the several immediately preceding species, especially *L. tæniata* WESTR. and *L. pulverulenta* ID. <sup>1)</sup>

1) I here add a description of what appears to me a new and very remarkable *Tarentula* from southern Europe, and which I call *T. nebulosa*.

*Tarentula nebulosa* N., cinereo-nigricans, pilis olivaceo- vel flavo-cinereis dense vestita et -sub-variata, cephalothorace vitta ad margines angusta clariore in maculas divulsa, pedibus nigricanti- et testaceo-annulatis, ventre luteo. — ♀ ad. Long. ca: 11½ millim.

Cephalothorax latus et humilis, dorso recto, in lateribus fortiter rotundatus, 5 millim. longus, fere 4 millim. latus, brevior quam patella et tibia 4:ti paris conjunctim, latitudine longitudinem tibiæ hujus paris superans; pilis olivaceo- vel flavo-testaceis tectus et sub-variatus, in fundo cinerascenti-niger, vitta angusta inæquali testacea in maculas paucas divulsa supra marginem utrinque; vestigia vittæ mediæ clarioris adsunt quoque, quæ circa sulcum ordinarium lata et ex maculis radiantibus quasi confecta videtur, pone oculos posticos angustata; hac vitta vero valde obsoleta (in exemplo juniore bene expressa). Frons parum altior quam



(Pag. 522). 25. *L. leopardus* [= *Pirata leopardus* (SUND.) 1833.]

*Syn.*: 1833. *LYCOSA LEOPARDUS* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 189.

1841. „ *CAMBRICA* BLACKW., The differ. in the numb. of eyes, *cet.*, p. 614.

1851. „ *LEOPARDUS* WESTR., Förteckn. etc., p. 54.

1856. *ARCTOSA LEOPARDUS* THOR., Rec. crit. Aran., p. 111.

1861. *LYCOSA CAMBRICA* BLACKW., Spid. of Gr. Brit., I, p. 32, Pl. II, fig. 14.

1870. *TROCHOSA LEOPARDUS* THOR., On Eur. Spid., p. 193.

It is possible, that also *Arctosa farinosa* C. KOCH (Die Arachn. XIV, p. 127, Tab. CCCCLXXXVIII, fig. 1360), which WESTRING loc. cit. has, with an interrogation, taken up under this species, really belongs to it: but excepting the legs, there is nothing in KOCH's figure, that appears to me to resemble "*L. leopardus*". — This species is met with also in Germany: I have myself caught a ♂ at Pyrmont, and I have been by v. KEMPELEN obliged with specimens from Austria. In England I have captured it in the vicinity of London, and I

dimidia mandibula; facies mandibulas versus multo latior, lateribus convexis. Sternum nigricans, cinerascens-pilosum. Oculorum series antica manifeste brevior quam media, vix procurva, fere recta; oculi ejus medii majores multo quam laterales, et inter se paullo magis quam ab his remoti; oculi seriei mediæ dimidia circiter diametro sua a lateralibus anticis distantes. Mandibulæ æque longæ ac tarsi pedum 1:mi paris, fusco-testaceæ, apice nigræ. Maxillæ et labium fusco-testaceæ. Palpi et pedes fusco-testacei, annulis nigricantibus; pedes 4:ti paris 15½ millim. longi ideoque cephalothorace paullo plus 3:plo longiores: tibia horum pedum 3½, patella + tibia 5⅔ millim.; pedes 1:mi paris plus 14 millim. longi. Annuli pedum nigricantes, interstitiis angustioribus cinereo-testaceis; coxæ fuscae, ad basin clariores; annuli femorum 4, angustiores, patellarum 1, tibiæ 3, metatarsorum 3; tarsi apice infuscati. Abdomen supra in fundo cinereo-nigricans, in lateribus infra fusco- et sub-testaceo-variatus, dense olivaceo- vel sub-testaceo-pilosus et sub-nebulosus, vestigiis punctorum vel macularum clariorum utrinque in dorso; ventre luteo, umbra fusca longitudinali utrinque. Area vulvæ sat parva, antice rotundata, nigro-fusca, impressione vel fovea media oblonga angusta postice; anguli areæ postici utrinque apud hanc foveam late emarginati sunt, et paullo pone eos, ad rimam genitalem, adest costa transversa, sub-procurva, quæ cum linea tenui elevata longitudinali sive septo per foveam illam ducto in figuram litteræ J sub-similem conjuncta est.

Exemplum femineum adultum ex Italia mecum communicavit Cel. Prof. CANESTRINI; feminam juniorem ex Dalmatia possideo, a Cel. Com. E. KEYSERLING dono mihi datam. — Ad colorem cum *Lyc. amentata* similitudinem quandam ostendit hæc species, sed major est, et non ad *Lycosas*, sed ad *Tarentulas* referenda.

have also received from CAMBRIDGE specimens of it under the name of *Lyc. cambrica* BLACKW. This species of BLACKWALL'S is by WALCKENAEER referred quite erroneously to his *Lyc. allodroma* (H. N. d. Ins. Apt., IV, p. 395).

The male's slender palpi have a very narrow lamina: the part of it lying in front of the bulbus is as long as the part containing this organ; the bulbus itself is very small, and exhibits a little tooth at the outer margin, in front of the middle. The lamina is somewhat shorter than the patellar and tibial joints together, the tibial joint not quite double so long as it is broad, scarcely longer than the patellar joint. The vulva is formed by two small rounded foveæ somewhat in front of the rima genitalis. The back of the cephalothorax is strongly arched: it is longer than patella + tibia of the 4<sup>th</sup> pair, its breadth equal to the length of metatarsus + tarsus of the 3<sup>rd</sup> pair (in both sexes). The 4<sup>th</sup> pair in ♂ is 3 times as long as the cephalothorax, in ♀ a trifle shorter.

I think it is better to refer this species to *Pirata*, than to *Trochosa* (*Arctosa*), its cephalothorax being only thinly clothed with hair, the centre eyes of the 1<sup>st</sup> row not larger than the lateral eyes, and the inferior tarsal claw armed with a tooth; by these characters it is separated from *Trochosa*, to which genus I formerly reckoned it.

(Pag. 523.) 26. **L. cinerea** [= *Trochosa cinerea* (FABR.) 1793].

- Syn.: 1793. ARANEA CINEREA FABR., Ent. Syst., II, p. 423.  
 1802. „ HALODROMA [ALLODROMA] WALCK., Faune Par., II, p. 238.  
 1805. LYCOSA „ „ ID., Tabl. d. Aran., p. 13.  
 1806. „ „ „ ID., H. N. d. Aran., 1, 4.  
 1822. „ MACULATA HAHN., Monogr. Aran., 3, Tab. III, fig. a.  
 1833. „ CINEREA SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 190.  
 1834. „ LYNX HAHN., Die Arachn., II, p. 13, Tab. XLII, fig. 104.  
 1837. „ LEUCOPHÆA BLACKW., Charact., cet., in Lond. and Edinb. Phil. Mag., 3 Ser., X, p. 104.  
 1839. „ HALODROMA [ALLODROMA] C. KOCH., Die Arachn., V, p. 106, Tab. CLXXII, fig. 410, 411.  
 1848. ARCTOSA CINEREA ID., ibid., XIV, p. 123, Tab. CCCCLXXXVIII, fig. 1358.  
 ?1848. „ LYNX ID., ibid. p. 133, Tab. CCCCLXXXIX, fig. 1364.  
 1861. LYCOSA HALODROMA [ALLODROMA] BLACKW., Spid. of Gr. Brit., I, p. 23, Pl. I, fig. 7.  
 1870. ARCTOSA „ „ ZIMMERM., Verzeichn. etc., p. 45.  
 1870. TROCHOSA CINEREA THOR., On Eur. Spid., p. 192.

*Arctosa cinerea* (FABR.), C. KOCH from the shores of the Baltic, and *A. halodroma* (WALCK.), C. KOCH from the banks of the rivers of central Europe, are certainly, as far as I can see, one and the same species: I have had occasion to compare a pretty large number of specimens, males as well as females, of both forms, partly from Travemünde, Gotland and Gotska Sandön, partly from Bavaria and Silesia. From the latter, or "*A. halodroma*" (for specimens of which I am indebted to the kindness of L. KOCH and ZIMMERMANN), the former, or "*A. cinerea*", differs only by its somewhat longer legs and its rather paler colour: the rings on the legs, especially on the thighs of ♂, are in this form sometimes reduced to mere spots on the upper side of the joint. "*A. cinerea*" seems also to be on an average a little smaller than "*A. halodroma*", of which I have a female, the cephalothorax of which is  $8\frac{1}{2}$  millim. long, whereas in the females of "*A. cinerea*" in my collection the cephalothorax is only  $6\frac{1}{2}$  millim. long. Nevertheless in both forms the size varies considerably: in both the body is sometimes darker and sometimes paler, with the marking on the abdomen more or less sharply defined, often almost obliterated. The differences between "*A. cinerea*" and "*A. halodroma*" seem to me scarcely so considerable or so constant as to justify the classing of the form *halodroma* as a separate variety of *Troch. cinerea*. GRUBE <sup>1)</sup> has found this species in Livonia as well on the sandy beaches of the Baltic, as on the banks of the Düna and other rivers; I have also seen a specimen precisely similar to those from the coast of the Baltic, which was found by Dr v. PORATH far inland, on the beach of the lake Vettern, near Jönköping, in the very heart of Sweden.

In my male specimens of *Tr. cinerea*, the cephalothorax is  $5\frac{1}{2}$ — $7\frac{1}{2}$  millim. long; it is low, with the sides rapidly rounded and the back almost straight. The 4<sup>th</sup> pair of legs in ♂ is  $3\frac{2}{3}$ — $3\frac{5}{6}$ , in ♀  $3\frac{1}{5}$ — $3\frac{2}{3}$  times as long as the cephalothorax; the tibia + patella of that pair is in ♂  $\frac{3}{4}$ —1 millim., in ♀ a little (not more than  $\frac{1}{2}$  millim.) longer than the cephalothorax; the greatest breadth of the cephalothorax exceeds the length of the tibiæ of the 4<sup>th</sup> pair by  $\frac{1}{2}$ —1 millim. in ♂, and about 1 millim. in ♀. The mandibles are in *both* sexes considerably *shorter* than the metatarsi of the first pair; the sternum is always black, having often a small pale line in the middle. The tibial joint of the palpi in ♂ is double

1) Verzeichn. d. Arachn. Liv-, Kur- u. Ehstlands, p. 449 (35).

as long as it is broad, the patellar joint, viewed from above, almost as long as the tibial joint. The lamina is considerably shorter than these two joints taken together, and about equal to the tibial + half the patellar joint. The bulbous exhibits on its outer side a transverse callus, the inner corner of which is raised into a little protuberance or tooth, which is pretty easily seen when the palpus is viewed from the outer side. The vulva is formed by two small, backward-diverging, oblong foveæ, the outer margin of which is sinuated somewhat inwards; they are separated by a septum which in front is narrower than the foveæ; behind the interval is broader; both foveæ together occupy a broad, transverse, almost triangular area with the corners rounded off.

*L. picta* HAHN was by WALCKENAER (H. N. d. Ins. Apt., I, p. 330), as also at first by C. KOCH, referred erroneously to *Tr. cinerea*. Respecting *L. picta* HAHN, see the next following species. — *L. maculata* HAHN is on the contrary, as C. KOCH suspects, merely an ill-executed figure of *Tr. cinerea*, and does not belong, as WALCKENAER loc. cit., p. 305, supposes, to *Tar. tarentulina* (SAV. et AUD.). Similarly *L. lynx* HAHN appears to me to be a sure synonym of *Tr. cinerea*; probably also *Arctosa lynx* C. KOCH, under which HAHN's *L. lynx* is taken up, is nothing else than a young *Tr. cinerea*.

I possess a spider from southern Germany, which I consider as identical with the *Arctosa amylacea* of C. KOCH<sup>1)</sup>, and which is very like *Tr. cinerea*, but is easily distinguished from it by its smaller size, shorter legs and more brownish yellow colour. The cephalothorax in this *Tr. amylacea* is less rounded off at the sides and somewhat higher than in *Tr. cinerea*; in ♂ it is 4—5¼ millim., in ♀ about 5½ millim. long; the legs of the 4<sup>th</sup> pair are in ♂ 3¼—3½, in ♀ about 3⅓ times the length of the cephalothorax. The tibia + patella of the 4<sup>th</sup> pair are in ♂ little, if at all, longer, in ♀ even shorter than the cephalothorax. The mandibles in the female are as long as the metatarsi of the 1<sup>st</sup> pair. In colour the cephalothorax of *Tr. amylacea* is dark brown, with darker stripes in the radiating depressions; it has a large star-shaped patch round the middle-furrow and the upper part of the head brownish yellow; on the sides of the head two small dark brown spots on each side usually project

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1) Die Arachn., V, p. 110, Tab. CLXXII, fig. 412. This species is perhaps the same as *Ar. (Lyc.) perita* LATR. 1798 (Descr. d'une nouv. esp. d'Araignée, in Bull. d. Sc. de la Soc. Philomath., I, no 22, p. 170; Gen. Crust. et Ins., I, p. 121.).

from the dark ground-colour, and behind the posterior eyes some small dark stripes and points may be seen; sometimes there is at the back of the head a distinct, dark  $\wedge$ . Above the margin, the cephalothorax exhibits a brownish-yellow longitudinal band, in which a double row of rather indistinct dark lines, curved towards each other, enclose an irregular double row of pale spots. The sternum is blackish- or brownish-yellow, sometimes rusty-brown. The legs and palpi are yellowish brown, thickly annulated with black-brown, the rings often broken on the under side. The abdomen is yellowish brown, with a greyish yellow central band in front, which is pointed behind and is surrounded by four greyish yellow spots connected with the band: between these spots are two pairs of black points or small spots; on the posterior part of the abdomen is a double row of small greyish spots united by more or less distinct angular lines. The belly is thickly covered with yellowish hair. The lamina bulbi of ♂ is of the same length as the patellar and tibial joints together; the bulbus has at the outer margin, in front of the middle, a little black tooth truncated at the tip, and somewhat difficult to see. The vulva is formed by two narrow, deep, backward-diverging depressions, separated by an interval everywhere broader than the depressions themselves; the interval is in front bounded by two small, black, backward-diverging lines or costæ; the rest of the vulva is reddish brown and is situated in a blackish spot rounded in front. — Of this species, *Tr. amylacea*, I possess some specimens from Austria, with which I have been favoured by Dr REDTENBACHER and Mr v. KEMPELEN.

(Pag. 525.) 27. *L. picta* [= *Trochosa picta* (HAHN) 1831].

- Syn.: 1831. *LYCOSA PICTA* HAHN, Die Arachn., I, p. 106, Tab. XXVII, fig. 79.  
 1848. *ARCTOSA* „ C. KOCH, ibid., XIV, p. 130, Tab. CCCCLXXXIX, figg. 1362, 1363.  
 1861. *LYCOSA* „ BLACKW., Spid. of Gr. Brit., I, p. 25, Pl. I, fig. 8.

Of this pretty little species I have Swedish specimens from Halland, Gotland and Öland, as also a ♂ and ♀ from England sent me by CAMBRIDGE. Like *Tr. cinerea*, *Tr. picta* varies greatly in colour, darker or paler: I have a ♂ from Halland, in which the dark rings on the legs are replaced by spots on the upper side of the legs, the underside of the legs, as also the palpi with the exception of the clava, being in this variety of a pale yellowish grey colour, and destitute of spots.

The tibial joint of the palpus in ♂ is not double as long as it is broad, somewhat shorter than the patellar joint. The bulbus has at its outer margin, near the apex, a tolerably long, almost straight process or blunt spine, directed inwards and somewhat backwards. The vulva is formed of two small, obliquely situated, oval foveæ, separated by an interval or septum narrow in front and rapidly dilating backwards.

(Pag. 526.) 28. *L. ruricola* [= *Trochosa ruricola* (DE GEER) 1778].

- Syn.*: 1778. ARANEA RURICOLA DE GEER, Mém., VII, p. 282, Pl. 11, figg. 13, 14; Pl. 17, figg. 1, 2 (*salt. ad part.*).  
 1802. " AGRETYCA WALCK., Faune Par., II, p. 238 (*salt. ad part.*).  
 1805. LYCOSA " ID., Tabl. d. Aran., p. 13 (*salt. ad part.*).  
 1806. " RURICOLA LATR., Gen. Crust. et Ins., I, p. 120 (*salt. ad part.*).  
 1829. " LAPIDICOLA HAHN, Monogr. Aran., 5, Tab. 1, fig. B.  
 ?1831. " RURICOLA ID., Die Arachn., I, p. 103, Tab. XXVI, fig. 77.  
 1833. " " SUND., Sv. Spindl. Beskrifn., in Vet.- Akad. Handl. f. 1832, p. 192 (*ad part.*).  
 1834. " ALPINA HAHN, Die Arachn., II, p. 57, Tab. LXIII, fig. 146.  
 1848. TROCHOSA RURICOLA C. KOCH, *ibid.*, XIV, p. 138, Tab. CCCCXCI, figg. 1369, 1370.  
 1851. LYCOSA CAMPESTRIS BLACKW., A Catal., *et.*, in Ann. and Mag. of Nat. Hist., 2 Ser., VII, p. 257 (*sec. Spid. of Gr. Brit.*).  
 1856. TROCHOSA RURICOLA THOR., Rec. crit. Aran., p. 101.  
 1861. LYCOSA CAMPESTRIS BLACKW., Spid. of Gr. Brit., I, p. 18, Pl. I, fig. 3.

That DE GEER by his *Ar. ruricola*, under which species he erroneously classed *Ar. cuneatus* CLERCK, understood this spider, so common throughout all central Sweden, cannot with the least appearance of reason be doubted, and although he, like many later writers, may have confounded the next following species, *Tr. terricola* (*Tr. trabalis* C. KOCH) with it, that cannot supply any reason for robbing WESTRING's *L. ruricola* of the specific name, which has priority before all others, and by which it is known to most foreign and all Swedish arachnologists. *L. ruricola* LATR. and *L. agretyca* WALCK., under which *Ar. ruricola* DE GEER is cited, are probably collective appellations for *both* species, and the same is the case with *L. ruricola* SUND. The size assigned by WALCKENAER in H. N. d. Ins. Apt. to his *L. agretyca* (6 or 7 lines), seems to suit best with *Tr. ruricola*: his statement (Faune Franç., Arachn., p. 19) that the last joint of the palpi in ♂ is *black*, agrees *only* with *Tr. ruricola*; his

assumption of a variety with the abdomen and cephalothorax of a greenish colour, also evidently refers to *T. ruricola*, for in *T. terricola* the colour probably never approximates to green. (LATREILLE, loc. cit., begins the description of his *L. ruricola*, which he considers identical with *L. agretyca* WALCK., thus: "*L. virescenti-brunneolivida*" etc.). *L. agretyca* WALCK. ought on this account, it appears to me, to be cited in the first place under *T. ruricola*: and even though WALCKENAER probably confounded *T. terricola* with it under the name of *L. agretyca*, we are not justified under such circumstances in giving the name *agretyca* to *T. terricola*, as BLACKWALL has done. "*Agretyca*" is moreover so extremely barbarous a word — it is probably derived from ἀγρευτικός (skilful in hunting), but ought then to be written *agreutica* —, that it should for that reason alone be rejected.

C. KOCH, like BLACKWALL, considers *L. agretyca* WALCK. as synonymous with *T. terricola*, and does not take it up among the synonyms of *T. ruricola*. BLACKWALL on the other hand cites *L. campestris* WALCK. under *T. ruricola*, and calls this species *L. campestris*. *L. campestris* WALCK. does not however appear to me referable with any tolerable degree of certainty either to *T. ruricola* or to *T. terricola*; for WALCKENAER distinctly states in three separate places (Faune Franç., Arachn., pp. 20 and 29; Ins. Apt., I, p. 310), that *L. campestris* differs from *L. agretyca* by, among other things, the colour and form of the cocoon, which is said to be "d'un vert bleuâtre, quelquefois tirant sur le jaune", and "toujours aplati". In both *T. ruricola* and *T. terricola* the cocoon, as is well known, is always white and globular. It seems also improbable, that WALCKENAER should take up under his *L. agretyca* not only *T. ruricola* C. KOCH but also *T. trabalis* ID. or *T. terricola* (vid. Ins. Apt., II, p. 451), if he had himself described them as separate species and called one of them *L. campestris*. If WALCKENAER's statement regarding the form and colour of the cocoon in his *L. campestris* should be a mistake, which it is not easy to suppose or explain, it seems to me that *L. campestris* WALCK. ought rather to be identified with *T. terricola*, than with *T. ruricola*, to which it is referred by BLACKWALL, for it is stated to be smaller than "*L. agretyca*", and the colour is not said to have any shade of green. In the mean time, as opinions on the subject of *L. campestris* differ so widely, and as the cocoon in this species has, according to WALCKENAER, a form totally different from that which it has in *T. terricola*, I consider that I cannot for this last-mentioned spider accept the Walkenaerian specific name *campestris*.

SIMON, in his Hist. Nat. d. Araignées, p. 510, among the synonyms of "*Troch. agretyca*" takes up *T. intricaria* C. KOCH (Die Arachn., XIV, p. 136, fig. 1367), which is a species widely differing both from *T. ruricola* and *T. terricola*, and particularly remarkable for the position of the eyes. Conf. THOR., On Eur. Spid., p. 193.

If HAHN's *L. ruricola* really were, as that author states, different from his *L. alpina*, it would most probably belong to *T. terricola*; for *L. alpina* is clearly shown by its greenish colour to be identical with *T. ruricola*. C. KOCH, who had seen the original specimens of *L. alpina*, also says (loc. cit., p. 141) that they are young, not fully developed individuals of *T. ruricola*. This explains HAHN's statement that "*L. alpina*" is smaller than "*L. ruricola*".

*Lyc. ruricola* HENTZ<sup>1)</sup> is a species quite different from the European *Troch. ruricola*, and appears to belong to the genus *Tarentula*.

C. KOCH seems to have been the first who separated *T. terricola* from *T. ruricola*; but he has erroneously identified the former with *Ar. trabalis* CLERCK and *Lyc. trabalis* SUND., which are identical with C. KOCH's *L. vorax*: Vid sup., p. 322, and Rec. crit., p. 62. — The males of *T. ruricola* and *T. terricola* are, as is known, easily distinguished from each other by the metatarsi of the 1<sup>st</sup> pair being in the first named species of the ordinary cylindrical form, not thickened, and that pair's tarsi being of the same (generally, though not always) dark colour as the tarsi and tibiae, whereas in *T. terricola* ♂ the metatarsi of the 1<sup>st</sup> pair are from the base and apex towards the middle somewhat thickened, almost fusiform, and the tarsi of the 1<sup>st</sup> pair are paler than the tibiae and metatarsi of the same pair, yellowish brown. In *T. ruricola* ♂ the tibial joint of the palpus is at least half as long again as it is broad, and the lamina is shorter than the two preceding joints put together; in *T. terricola* ♂ the tibial joint of the palpus is not half as long again as it is broad, and the lamina is equal in length to the patellar and tibial joints put together. The bulbus in both species exhibits on the outer margin, near the middle, a little pointed process, which in *T. ruricola* is slenderer and has the form of a fine, inward-pointing spine; in *T. terricola* it is somewhat coarser and ought rather to be called a sharp, inward-curved tooth. — The females it may sometimes be difficult to distinguish; in *T. ruricola* however the back of

1) Descr. and fig. of the Aran. of the United States, in Boston Journ. of Nat. Hist., IV, p. 387, Pl. XVII, figg. 5, 6.



the cephalothorax is *straight*, in *T. terricola* evidently longitudinally *arched*. The vulva is also slightly different; in *T. ruricola* it is formed by a little fovea broader behind and rounded in front, traversed by a narrow septum, which at the hinder extremity, where the fovea is somewhat wider, suddenly dilates into a transverse costa or narrow plate. In *T. terricola* the vulva is of precisely the same form, but somewhat larger, and includes *two obliquely posited tubercles*, one in each of the hinder corners and immediately in front of the transversal costa or plate, which tubercles seem to be absent or at least less distinct in *T. ruricola*. *T. ruricola* is also generally larger than *T. terricola*, but in size it varies incredibly; I have Swedish specimens (females) in which the cephalothorax is only  $4\frac{1}{4}$  millim. long, whereas in others it reaches  $7\frac{1}{2}$  millim.; in a female from Nice it is not fully 4 millim. long. In the males in my collection the length of the cephalothorax varies from  $3\frac{1}{2}$  to 5 millim. *T. terricola* does not appear to vary so greatly in size.

English specimens of both sexes as well of "*L. campestris* BLACKW." as of "*L. agretyca* ID." have been kindly transmitted to me by CAMBRIDGE. SIMON has sent me a ♂ *ad.* of *T. terricola* (not *T. ruricola*) under the appellation of "*Troch. campestris* (WALCK.)."

(Pag. 529.) 29. **L. terricola** [= *Trochosa terricola* (THOR.) 1856].

- Syn.*: †?1802. ARANEAE AGRETYCA WALCK., Faune Par., II, p. 238 (*ad part.*).  
 ?1805. LYCOSA " ID., Tabl. d. Aran., p. 13 (*ad part.*).  
 †?1806. " RURICOLA LATR., Gen. Crust. et Ins., I, p. 120 (*ad part.*).  
 1833. " " SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 192 (*ad part.*).  
 †1836. " TRABALIS C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 134, 19, 20 (*sec.* KOCH, Die Arachn.).  
 1843. " AGRETYCA BLACKW., A Catal., *cet.*, in Transact. of the Linn. Soc., XIX, p. 118 (*sec.* Spid. of Gr. Brit.).  
 1848. TROCHOSA TRABALIS C. KOCH, Die Arachn., XIV, p. 141, Tab. CCCCXCII, figg. 1371–1374.  
 1856. " TERRICOLA THOR., Rec. crit. Aran., p. 62, 102.  
 1861. LYCOSA AGRETYCA BLACKW., Spid. of Gr. Brit., I, p. 17, Pl. I, fig. 2.  
 1870. TROCHOSA TERRICOLA ZIMMERM., Verz. d. Spinn. v. Niesky, p. 46.

See the preceding species, *L. ruricola* WESTR.

(Pag. 530.) 30. **L. piscatoria** [= *Pirata piscatorius* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS PISCATORIUS CLERCK, Sv. Spindl., p. 103, Pl. 5, tab. 5.  
 1789. ARANEAE PISCATORIA OLIV., Encycl. Méth., IV, p. 218.

1848. *TROCHOSA UMBRATICOLA* C. KOCH, Die Arachn., XIV, p. 137, Tab. CCCCXCI, fig. 1368.  
 1851. *LYCOSA PISCATORIA* WESTR., Förteckn. etc., p. 54.  
 1856. *POTAMIA* „ THOR., Rec. crit. Aran., p. 64.  
 1871. *LYCOSA DE GREYII* CAMBR., Descr. of some Brit. Spid., *cet.*, in Transact. of the Linn. Soc., XXVII, p. 396, Pl. 54, no. 3.

The spider, to which CLERCK has given the name of *Ar. piscatorius* and which WESTRING has here described, is widely different from the species, which BLACKWALL and C. KOCH call *L. piscatoria*. From these as well as from *P. piraticus*, under which it is taken up by, for instance, WALCKENAER (H. N. d. Ins. Apt., I, p. 339), *P. piscatorius* (CLERCK) is distinguished by its more considerable size, as well as by its short legs etc. In the *female* the cephalothorax attains a length of more than 5 millim. (nevertheless smaller individuals are often met with: I have for instance one, in which the cephalothorax is hardly 4 millim. long), and is *equal in length* to the tibia + patella of the 4<sup>th</sup> pair; its breadth somewhat *exceeds* the length of the tibia of that pair: the mandibles are *as long as* the metatarsi of the 1<sup>st</sup> pair; the legs of the 4<sup>th</sup> pair are about  $3\frac{1}{5}$  times as long as the cephalothorax. The first row of eyes is visibly *longer* than the second row: its centre eyes are *considerably larger* than the lateral, and are situated rather farther from each other than from the lateral eyes, and are not much smaller than the two eyes of the third row. The sternum is of a darker or paler yellowish brown, with darker margin. The rusty-yellow, spear-shaped spot on the fore part of the abdomen is sometimes wanting (as in CLERCK's figure and in the (dried) type-specimens to WESTRING's and my own above-cited descriptions), but in a number of specimens collected in Skåne partly by Mr ROTH, and communicated by Prof. WAHLGREN of Lund, and partly by Mr EISEN, that spot is as conspicuous as on C. KOCH's figure, or as in the Bavarian specimens which I have received from L. KOCH under the name of *Troch. umbraticola* C. KOCH: it has usually a little tooth or angle on each side near the middle. The vulva is composed of two small, blackish, crescent-shaped, inward- and forward-curved costæ, each bending round a little protuberance situated immediately within it. The full-grown male is unknown to me: but Mr CAMBRIDGE, to whom I have sent a ♀, agrees with me in considering it to be the same species, the male of which has been described by him (loc. cit.) under the name *L. de Greyii*.

C. Koch's synonym, *Troch. umbraticola*, may seem uncertain, for he does not mention that the paler band on the back of the cephalothorax is forked in front, and there encloses a pale middle stripe, as is the case both in *P. piscatorius* and *P. piraticus*, though that band is not so conspicuous in the former as in the latter species; neither does he mention the double row of snow-white points on the hinder part of the back of the abdomen in *P. piscatorius*. C. Koch had however seen only one specimen of his *Tr. umbraticola*, the figure of which in other respects agrees very well with *P. piscatorius*. — Large and dark specimens of this spider bear a certain resemblance in colour and habitus to *Dolom. fimbriatus* CLERCK.

By its short legs and low forehead, *P. piscatorius* stands on the line of transition to the genus *Trochosa*, to which it is referred by C. Koch. The position of the eyes appears to me however not to differ from that of *P. piraticus* ♀, and, as the species in its colours, in the form of the vulva and in its habits assimilates to *P. piraticus*, I conceive that I ought to aggregate it to the genus *Pirata*. CLERCK captured it "running on the surface of the water", in company with *P. piraticus* (vid. loc. cit.), and I have myself found it on the shores of a lake in Westergötland. Most of the specimens that I have seen, had been captured at the lake Ringsjön in Skåne.

Regarding *L. piscatoria* BLACKW. and *L. (Potamia) piscatoria* C. Koch, see the next species.

(Pag. 532.) 31. *L. piratica* [= *Pirata piraticus* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS PIRATICUS CLERCK, Sv. Spindl., p. 102, Pl. 5, tab. 4.  
 1777. ARANEA PALUSTRIS FABR., Spec. Ins., I, p. 542.  
 1789. " PIRATICA OLIV., Encycl. Méth., IV, p. 218.  
 1802. LYCOSA " WALCK., Tabl. d. Aran., p. 14.  
 1831. " " HAHN, Die Arachn., I, p. 107, Tab. XXVII, fig. 80.  
 ?1835. " PALUSTRIS C. KOCH, in HERR.-SCHÄFF., Deutschl. Ins.,  
 131, 13 (sec. WALCK., Ins. Apt.).  
 1848. " (POTAMIA) PIRATICA ID., Die Arachn., XV, p. 1, Tab.  
 DV, figg. 1413, 1414.  
 1856. POTAMIA PIRATICA THOR., Rec. crit. Aran., p. 63.  
 1870. PIRATA PIRATICUS ID., On Eur. Spid., p. 193.

WALCKENAER, SUNDEVALL and HAHN erroneously cite *Ar. piscatorius* CLERCK (the preceding species) under *Lyc. piratica*. Of the synonyms taken up by C. Koch under his *L. (Pot.) piratica*, *Ar. palustris* LINN. does not belong to it; neither in all probability does

*Ar. palustris* SCHRANCK. As regards the former of these, vid. sup., p. 289; as regards the latter, p. 300.

In *P. piraticus* the legs, palpi and mandibles are usually olive-yellow, without spots; yet individuals are sometimes met with, especially belonging to a darker variety, in which the thighs have two tolerably distinct dark rings. The cephalothorax is about  $\frac{1}{2}$  millim. shorter than the patella + tibia of the 4<sup>th</sup> pair; its breadth is in ♀ equal to, in ♂ slightly less than, the length of the tibia of that pair. The cephalothorax in ♀ is  $3\frac{1}{4}$ — $3\frac{2}{3}$ , in ♂  $2\frac{3}{4}$ — $3\frac{1}{2}$  millim. long. The legs of the 4<sup>th</sup> pair are in ♀ about  $3\frac{1}{2}$  times as long as the cephalothorax, in ♂ ordinarily somewhat longer, but not fully 4 times as long as the cephalothorax. The broad olive-yellow marginal bands on the cephalothorax are uneven on their upper edge, but not coarsely or deeply indented. The sternum is of a paler or darker yellowish colour, without a pale middle-stripe. The anterior row of eyes is in the female (though hardly so in the male) distinctly longer than the middle row, and the centre eyes distinctly larger than the lateral eyes and somewhat more distant from each other than from these last. The mandibles are in both sexes considerably shorter than the metatarsi of the first pair. The vulva is formed by two small, brown, uneven elevations, converging and becoming narrower backwards, and situated close by the rima genitalis. The tibial joint of the palpus in ♂ is fully double as long as it is broad, somewhat longer than the patellar joint; the lamina is not so broad as the thigh, but broader than the tibia of the 1<sup>st</sup> pair; the bulbus is on the under side rather equably and strongly swelled; viewed from the side it extends forward into a short, coarse, slightly upturned point.

Nearly allied to *P. piraticus* are *L. (Pot.) piscatoria* C. KOCH<sup>1)</sup>, which I look upon as identical with *Ar. Knorrii* SCOP.<sup>2)</sup> and therefore call *P. Knorrii*, and *L. piscatoria* BLACKW.<sup>3)</sup>, for which I propose the name of *P. hygrophilus*: both are widely different from the real *P. piscatorius* (CLERCK), on which see the foregoing species.

1) Die Arachn., XV, p. 6, Tab. DVI, figg. 1417—1419.

2) "*Aranea Knorrii*. Fusca, abdomine elliptico, villosa, lateribus subtusque pallidiore. Cursitat super aquas, easque petit fugiens... Femora fusco-fasciata, rufescentia. Statura *Saccata*" (SCOP., Ent. Carn., p. 403). — On the addition: "non diversa ab *Aranea fimbriata* LINNÆI," no weight can be laid, since what SCOPOLI says of the colour of the legs and of the size does not suit *Dolom. fimbriatus*.

3) Spid. of Gr. Brit., I, p. 34, Pl. II, fig. 16.

In *P. Knorrii* (Scop.), n., or *L. piscatoria* C. Koch, the legs and palpi are brownish yellow, with very distinct dark rings not only on the thighs, but also on the following joints. This species is darker and appears to be a little larger than *P. piraticus*; at least I have a male specimen, the cephalothorax of which is 4 millim. long. The legs also are comparatively something longer, at least in ♂, in which they are sometimes as much as 4 times the length of the cephalothorax, which in ♀ is about  $\frac{1}{2}$ , in ♂ about 1 millim. shorter than patella + tibia of the 4<sup>th</sup> pair; its breadth, as well in the female as in the male, is at least  $\frac{1}{2}$  millim. less than the length of the tibia of the same pair. The brownish yellow marginal bands on the cephalothorax are on the upper border coarsely and deeply indented. The sternum is dark-brown or blackish, with a brownish yellow middle-stripe. The anterior row of eyes is not longer than the middle one, its centre eyes are scarcely larger (in ♀ rather smaller) than the lateral eyes, and all at about equal distances from each other. The mandibles are in the female considerably shorter than, in ♂ hardly more than half the length of, the metatarsi of the 1<sup>st</sup> pair. The vulva is formed by two tubercles at the rimæ genitalis, much as in *P. piraticus*. The tibial joint of the palpus in ♂ is double as long as it is broad, somewhat longer than the patellar joint; the lamina is narrow and long, not broader than the tibia of the 1<sup>st</sup> pair; the bulbus is less turgid than in *P. piraticus*, and terminates (when viewed from the side) in front in a coarse, pointed, diaphanous, upward-curved process or spine.

*P. hygrophilus* N., or *L. piscatoria* BLACKW. (= *Pot. piscatoria* OHL., Aran. d. Prov. Preuss., p. 132, and also = the chief form of *L. uliginosa* WESTR. — non THOR. —, according to specimens communicated by OHLERT and WESTRING), is in colour very like *P. Knorrii*, but it is smaller, and its cephalothorax is broader and more rounded at the sides than that of *P. Knorrii*; it is further and easily distinguished from that species and from *P. piraticus* by its very peculiar organs of copulation, and by the shorter legs of ♂. The legs are yellowish brown with not very distinct dark rings: the edge of the cephalothorax is black or blackish brown, and the yellowish brown marginal bands coarsely and deeply indented on the upper edge. The cephalothorax is as long as, or but inconsiderably (not  $\frac{1}{2}$  millim.) shorter than, the tibia + patella of the 4<sup>th</sup> pair; its breadth is as great as, not less than, the length of the tibia of the same pair. In my specimens the cephalothorax is  $2\frac{1}{2}$ — $3\frac{1}{4}$  millim. long, the

legs of the 4<sup>th</sup> pair only about  $3\frac{1}{4}$  times the length of the cephalothorax (in both sexes). The sternum is of a paler or darker yellowish brown, often, but not always, with a paler middle-stripe. The first row of eyes is scarcely so long as the middle row; the centre eyes of the first row are hardly larger than the lateral eyes, or more widely separated from each other than from them. The mandibles are in both sexes but *inconsiderably* longer than the metatarsi of the 1<sup>st</sup> pair. The vulva consists of a rather large, reddish brown area rounded in front, the side-parts of which have the form of two large, slightly convex, oblong, rounded elevations, behind which the area is drawn out somewhat backwards to the rima genitalis: this middle and posterior, narrower part, which is somewhat broader behind, exhibits two longitudinal depressions or furrows diverging backwards. The male's palpi are yellowish brown, with darker stripes; their tibial joint is only half as long again as it is broad, scarcely longer than the patellar joint. The lamina is at the base blackish and broad, as broad as the thighs of the 1<sup>st</sup> pair. The bulbus is short, very turgid, almost as high as it is long; on the outer side it exhibits a coarse, pale, compressed process, issuing from the middle of the bulbus, and reaching to its apex: it lies close to the bulbus, making a slightly  $\neg$ -formed curve, and having its blunt extremity directed downwards. At the inner border, near the apex, the bulbus has a short, broad, blunt, downward-pointing, black little lamella or tooth; about the middle of the under side, though somewhat nearer to the apex, it exhibits a very small, downward-directed, black tooth. All this is easily seen, when the bulbus is examined in profile either from the inner or outer side.

*P. uliginosus* THOR. much resembles *P. hygrophilus*, but is nevertheless a fully distinct species. I have only two full-grown (dried) female specimens of it, in which the cephalothorax is  $2\frac{1}{2}$  millim. long by 2 millim. broad, its breadth being equal to the length of the tibia of the 4<sup>th</sup> pair; the patella and tibia of that pair are together  $\frac{1}{2}$  millim. longer than the cephalothorax. The margin of the cephalothorax is black, and the snow-white hair-line along the edge, usual in most of the species of *Pirata*, seems here to be entirely absent. The sternum is blackish, with a pale middle-line. The first row of eyes appears to me shorter than the middle row, and the eyes in it to be about equally distant from each other, and the central scarcely larger than the lateral eyes. The legs are of a dark olive- or blackish-yellow colour, with darker spots and

stripes, but *without* perceptible rings. The tibiæ of the 1<sup>st</sup> pair, which are somewhat coarser than the others are dark and blackish, and the spines on their under side very long: the first pair of these spines reach with their apices at least as far as the middle of the next pair. The vulva is composed of two oblong, almost parallel, widely separated foveæ near the rima genitilis, outwards and behind bordered by a paler costa: from this costa a little tooth appears to project into the outer side of the fovea; both foveæ are situated on a large brown, horny area. — *P. uliginosus* is easily distinguished from *P. latitans* (BLACKW.) 1841 <sup>1)</sup> or *Lyc. (Potamia) palustris* C. KOCH 1848<sup>2)</sup> by the cephalothorax having, as in all the *Pirata*-species mentioned in the preceding pages, a paler middle-band forked in front and enclosing in the fore part, within the fork, a pale central stripe: in *P. latitans* the fore or forked portion of the band is wanting, or at least is only visible when the animal is immersed in fluid, and the pale middle stripe in front is altogether absent; whereas, when the animal lies in spirit, a broad triangular darker spot is perceptible just where the forked band, if there were one, would begin to divide. and in front of that spot a fine dark line bordered by two paler stripes. This is at least the case in a ♂ and a ♀ *ad.* from England, which CAMBRIDGE had the kindness to send me. The cephalothorax is in *P. latitans* ♂ 2, in ♀ 2<sup>1</sup>/<sub>2</sub>, millim. long somewhat shorter than patella + tibia the of 4<sup>th</sup> pair, its breadth being equal to the length of the tibia of that pair. The sternum is of a dark yellowish brown colour, without any paler middle line. The legs are distinctly dark-annulated in ♀; in ♂ the rings are less distinct and the patellæ and tibiæ of the 1<sup>st</sup> pair are somewhat dark. The vulva is formed by a little, bright, raised, brown area at the edge of the rima genitilis, divided by a longitudinal middle-furrow into two inversely oviform tubercles. The tibial joint of the palpus in ♂ is double as long as it is broad, something longer than the patellar joint; the lamina is tolerably broad, broader than the

1) The differ. in the numb. of eyes etc., in *Transact. of the Linn. Soc.*, XVIII, p. 612; *Spid. of Gr. Brit.*, I, p. 33, Pl. II, fig. 15.

2) *Die Arachn.*, XV, p. 4, Tab. DV, figg. 1415, 1416. — As C. KOCH probably gave to this spider the name *palustris* under the idea, that it was, at least *ad partem*, identical with *Ar. palustris* LINN., which is by no means the case (*L. palustris* C. KOCH has not hitherto been found in Sweden), there is no reason to preserve that name, even if it be this species, that C. KOCH described in 1835, in *HERR.-SCHEFF.*, *Deutschl. Ins.*, 131, 13, under the name of *L. palustris*.

tibia, but narrower than the thigh of the 1<sup>st</sup> pair; the bulbus is on the under side somewhat irregularly turgid, without any conspicuously prominent parts. — The face is high, with perpendicular sides, the first row of eyes perceptibly shorter than the middle row; the trapezium formed by the four posterior eyes is not so broad behind as in other *Pirata*-species. These characteristics mark *P. latitans* as standing on the limit between *Lycosa* and *Pirata*, just as *P. piscatorius* stands on that between *Trochosa* and *Pirata*.

I have received specimens of *P. Knorrii* or *L. piscatoria* C. KOCH from Bavaria from Count KEYSERLING, and from Austria from Mr. L. v. KEMPELEN. It has not hitherto been discovered in Sweden. Of *P. hygrophilus* I have specimens from England communicated by CAMBRIDGE under the name of *L. piscatoria* BLACKW., and from Königsberg in Prussia sent by OHLERT under the name of *Pot. piscatoria* OHL. BLACKWALL'S figures of this species are quite irrecognizable. — Dr L. KOCH has kindly supplied me with Bavarian specimens of *L. palustris* C. KOCH.

(Pag. 533.) 32. **L. uliginosa** [= *Pirata hygrophilus* N. + *Pirata uliginosus* THOR. 1856].

Forma principalis (*P. hygrophilus*):

Syn.: 1861. LYCOSA PISCATORIA BLACKW., Spid. of Gr. Brit., I, p., 34, Pl. II, fig. 16.  
1867. POTAMIA „ OHL., Aran. d. Prov. Preuss., p. 132.

„Var.?” (*P. uliginosus*):

1856. POTAMIA ULIGINOSA THOR., Rec. crit. Aran., p. 111.  
1870. PIRATA ULIGINOSUS ID., On Eur. Spid., p. 194.

Regarding the two species which have by WESTRING been confounded under the name of *L. uliginosa*, see above, p. 343—345.

(Pag. 534.) II. **DOLOMEDES** [= *Dolomedes* (LATR.) 1804].

Vid. THOR., On Eur. Spid., p. 194.

Pag. 535.) 1. **D. fimbriatus** [= *Dolomedes fimbriatus* (CLERCK) 1757]  
+ *Dolomedes plantarius* (ID.) 1757].

*D. fimbriatus*:

Syn.: 1757. ARANEUS FIMBRIATUS CLERCK, Sv. Spindl., p. 106, Pl. 5, tab. 9.  
1757. „ UNDATUS ID., ibid., p. 100, Pl. 5, tab. 1.



1758. ARANEA FIMBRIATA LINN., Syst. Nat., Ed. 10, I, p. 621.  
 1758. " VIRESCENS ID., *ibid.*, p. 623.  
 ?1761. " PALUSTRIS ID., Fauna Suec., Ed. 2, p. 491 (*ad part.*).  
 1778. " PALUDOSA DE GEER, Mém., VII, p. 278, Pl. 16, figg. 9-12.  
 1778. " MARGINATA ID., *ibid.*, p. 281, Pl. 16, figg. 13-15.  
 1799. " " PANZ., Faun. Ins. Germ., 71, 22.  
 1805. DOLOMEDES FIMBRIATUS WALCK., Tabl. d. Aran., p. 16.  
 1805. " MARGINATUS ID., *ibid.*  
 1831. " FIMBRIATUS HAHN, Die Arachn., I, p. 14, Tab. IV, fig. 10.  
 1831. " LIMBATUS ID., *ibid.*, p. 15, Tab. IV, fig. 11.  
 1831. " MARGINATUS ID., *ibid.*, p. 15, Tab. IV, fig. 12.  
 1848. " FIMBRIATUS C. KOCH, *ibid.*, XIV, p. 116, Tab. CCCCLXXXV, figg. 1352, 1353.  
 1859. " ORNATUS BLACKW., Descr. of six rec. disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., III, p. 91.  
 1861. " " ID., Spid. of Gr. Brit., I, p. 39, Pl. II, fig. 19.  
 1861. " FIMBRIATUS ID., *ibid.*, p. 40, Pl. II, fig. 20.

### *D. plantarius*:

- Syn.: 1757. ARANEUS PLANTARIUS CLERCK, Sv. Spindl., p. 105, Pl. 5, tab. 8.  
 1803. ARANEA 14-PUNCTATA SCHRANCK, Fauna Boica, III, I, p. 237.  
 1834. DOLOMEDES RIPARIUS HAHN, Die Arachn., II, p. 59, Pl. LXIV, fig. 148.  
 ?1834. " PLANTARIUS ID., *ibid.*, p. 60, Tab. LXIV, fig. 149.  
 ?1837. " " WALCK., H. N. d. Ins. Apt., I, p. 353.

In the works of some older writers, "*Ar. fimbriata*" probably includes both the forms, which we here separate under the names of *D. fimbriatus* and *D. plantarius*, and which C. KOCH, WESTRING and others (including myself in Rec. crit. Aran.) have considered as belonging to one and the same species. Having however lately had an opportunity of examining two *full-grown* Swedish females of *D. plantarius*, I feel myself tolerably certain, that this form really is, as (WALCKENAER,) VAN HASSELT<sup>1)</sup> and others have assumed, a different species from *D. fimbriatus*. It is not merely the absence of the white or yellow lateral bands on the cephalothorax, that distinguishes *D. plantarius* from *D. fimbriatus*; the different form of the cephalothorax itself is of more decisive significance, the cephalothorax being, in *D. plantarius*, broader and lower than in *D. fimbriatus*. In one of the full-grown female specimens of *D. plantarius*, that I have examined, the cephalothorax is 8½ millim. long and 8 millim. broad,

1) Over huid- en kleur-verwisseling v. *Dol. fimbriatus* etc., in Tijdschrift v. Entom., I, 6, p. 164.

in the other it is 8 millim. long and  $7\frac{1}{2}$  broad; in a very nearly, but *not quite* full-grown female I have found it 7 millim. long and  $6\frac{1}{2}$  millim. broad; in another somewhat less developed female specimen it is  $6\frac{1}{2}$  millim. long and  $5\frac{3}{4}$  millim. broad. In full-grown or nearly full-grown specimens of *D. plantarius* ♀ the length of the cephalothorax then appears to exceed its breadth by only  $\frac{1}{2}$  millim., whereas in *D. fimbriatus* ♀ the cephalothorax is 1 or  $1\frac{1}{2}$  millim. longer than it is broad, as I have found by measuring 10 full-grown specimens in my collection. In young individuals of *D. plantarius*, the difference between the length and breadth of the cephalothorax appears to be greater than in older specimens, and it will therefore probably often be difficult to distinguish from each other younger specimens of the two species.

Even in very large individuals of *D. fimbriatus* (such as have the cephalothorax 8—9 millim. long), the greatest breadth of the eye-area scarcely exceeds 2 millim., whereas in equally large specimens of *D. plantarius* it is  $2\frac{1}{2}$  millim. In *D. fimbriatus* the length of the legs in proportion to that of the cephalothorax varies considerably; the cephalothorax is generally about as long as the tibia of the 4<sup>th</sup> pair, sometimes shorter, yet more often  $\frac{1}{2}$ —1 millim. longer, than this tibia. The cephalothorax is moreover as long as (sometimes a trifle, at the utmost  $\frac{1}{2}$  millim. longer or shorter than) metatarsus + tarsus of the 1<sup>st</sup> pair. In the full-grown specimens of *D. plantarius*, which I have seen, the cephalothorax is as long as, or  $\frac{1}{2}$  millim. longer than, the tibia of the 4<sup>th</sup> pair, and 1 to  $1\frac{1}{2}$  millim. shorter than metatarsus + tarsus of the 1<sup>st</sup> pair. The palpi are thicker towards the extremity in *D. plantarius* than in *D. fimbriatus*. All this applies to full-grown females only: in younger specimens of both species the legs are usually shorter and coarser than in full-grown.

In *D. fimbriatus* the vulva has the form of a large, not very deep depression or fovea rounded at the sides, the raised and especially in the hinder part turgid margins of which approach each other behind, without however meeting: the back part of the fovea includes a brown disk, rounded at the sides and narrower behind, and at the bottom of the fovea, in front of that disk, a couple of elevated longitudinal lines may generally be perceived. The vulva in *D. plantarius* is very similar to that in *D. fimbriatus*: it consists of a large shallow depression, bounded at the sides by two low, crescent-formed ridges or costæ curved towards each other, which at the extreme back part almost unite, there including a triangularly heart-shaped disk.

The male of *D. plantarius* is unknown to me. — Of *D. fimbriatus* I have a ♂ *ad.*, of which the cephalothorax is 7 millim. long and 6 millim. broad; the tibia of the 4<sup>th</sup> pair is  $6\frac{1}{4}$  millim., the metatarsus + tarsus of the 1<sup>st</sup> pair  $8\frac{3}{4}$  millim. The patellar joint of the palpus is half as long again as it is broad, rather thicker towards the extremity. The tibial joint has at its apex, on the outer side, above, a short, coarse, somewhat downward curved process directed forwards, with its blunt apex cloven into several teeth, as also below this, at the lower extremity of the outer side of the joint, a longer and stronger, somewhat upward-curved, pointed process, directed forwards. The lamina is somewhat longer than the two preceding joints taken together; the organs of copulation are very complicated.

The differences in the relative sizes and position of the eyes in the first row, which WALCKENAER (Ins. Apt., I, p. 354) affirms to exist between *D. fimbriatus* and *D. plantarius*, I am not able to discover, and the synonym *D. plantarius* WALCK. is therefore very uncertain. On the other hand *D. ornatus* BLACKW. is assuredly nothing more than a young *D. fimbriatus*.

To *D. fimbriatus* probably belongs the spider, which LINNÆUS in the 2<sup>nd</sup> Edition of his Fauna Suecica has confounded with *Lycosa palustris* (LINN.) or *L. tarsalis* THOR. under the appellation of *Ar. palustris*. Probably also *Ar. palustris* MÜLL. (Fauna Ins. Friedrich., p. 94) and *Ar. palustris* SCHRANCK (Fauna Boica III, 1, p. 235) belong to *D. fimbriatus*. Vid. supr., p. 290, 300. By C. KOCH LINNÆUS' and SCHRANCK'S *Ar. palustris* is erroneously referred to *Pirata piraticus* (Die Arachn., XV, p. 1).

(Pag. 536.) III. OCYALE [= *Ocyale* (SAV. et AUD.) 1827].

See THOR., On Eur. Spid., p. 194.

(Pag. 537.) 1. *O. mirabilis* [= *Ocyale mirabilis* (CLERCK) 1757].

- Syn.: 1757. ARANEUS MIRABILIS CLERCK, Sv. Spindl., p. 108, Pl. 5, tab. 10.  
 1778. ARANEA RUFO-FASCIATA DE GEER, Mém., VII, p. 269, Pl. 16, figg. 1—8.  
 1789. " AGRARIA OLIV., Encycl. Méth., IV, p. 215.  
 1793. " OBSCURA FABR., Ent. Syst., II, p. 419.  
 1802. " MIRABILIS WALCK., Faune Par., II, p. 236.  
 1804. " ARCUATO-LINEATA PANZ., Syst. Nomencl., p. 156. (SCHÆFF.  
 Ic. Ins. Ratisb., II, Tab. CLXXII, fig. VI).

1805. DOLOMEDES MIRABILIS WALCK., Tabl. d. Aran., p. 16.  
 1833. OCYALE " SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.  
 f. 1832, p. 198.  
 1834. DOLOMEDES " HAHN, Die Arachn., II, p. 35, Tab. LI, fig. 120.  
 ?1837. OCYALE MURINA C. KOCH, Uebers. d. Arachn.-Syst., I, p. 23.  
 1848. " MIRABILIS ID., Die Arachn., XIV, p. 107, Tab. CCCCLXXXII,  
 fig. 1346.  
 1848. " RUFO-FASCIATA ID., ibid., p. 110, Tab. CCCCLXXXII, fig.  
 1347.  
 ?1848. " MURINA ID., ibid., p. 111, Tab. CCCCLXXXII, fig. 1348.  
 1849. DOLOMEDES SCHEUCHZERI MENZ., Kurz. Abr. einer Naturgesch. d.  
 Spinn., p. 12, fig. 17.  
 1861. " MIRABILIS BLACKW., Spid. of Gr. Brit., I, p. 37, Pl.  
 II, fig. 18.

*Ar. mirabilis* CLERCK and *Ar. rufo-fasciata* DE GEER are varieties only of one and the same species. I suppose that even *O. murina* C. KOCH is nothing more than a variety of *O. mirabilis*: I have at least female specimens both from northern and southern Europe, which in colour perfectly agree with C. KOCH's description of *O. murina*, but in which I cannot discover any differences of structure, not even in that of the vulva. — MENZEL (loc. cit.) calls this spider *Dolom. Scheuchzeri* BREMI; I do not know in what work BREMI has employed that name.

(Pag. 538.) IV. SPHASUS [= *Oxyopes* (LATR.) 1804].

Vid. THOR., On Europ. Spid., p. 197.

(Pag. 539.) 1. *S. lineatus* [= *Oxyopes ramosus* (PANZ.) 1804].

- Syn.: 1804. ARANEA RAMOSA PANZ., Syst. Nomencl., p. 165. (SCHÆFF., Ic. Ins.  
 Ratisb., II, Tab. CLXXXIX, fig. vi).  
 ?1804. " HETEROPHTHALMA LATR., H. N. d. Crust. et d. Ins., VII,  
 p. 280.  
 ?1806. OXYOPES VARIEGATUS ID., Gen. Crust. et Ins., I, pag. 116.  
 ?1807. SPHASUS HETEROPHTHALMUS WALCK., H. N. d. Araignées, 3, 8.  
 1834. OXYOPES VARIEGATUS HAHN, Die Arachn., II, p. 36, Tab. LII, fig. 121.  
 1839. SPHASUS " C. KOCH, ibid., V, p. 95, Tab. CLXX, fig. 403.  
 1856. " LINEATUS THOR., Rec. crit. Aran., p. 112.  
 1867. " VARIEGATUS OHL., Aran. d. Prov. Preuss., p. 123.

WESTRING has been kind enough to send me the typical specimen of his *Sph. lineatus*, a young, very bare-rubbed female, which

however certainly does *not* belong to the real *S. lineatus* C. Koch, but to "*S. variegatus*". I have myself here in Upland captured a full-grown female of this latter species, erroneously taken up by myself loc. cit. under the name of *S. lineatus*, and I have also a ♂ *jun.*, from the neighbourhood of Upsala. It is very improbable, that the true *S. lineatus* C. Koch is to be met with in Scandinavia, especially in *Lappland*, whence WESTRING's spider was obtained: I am not sure that that species has been found in Germany north of the Alps'), whereas "*S. variegatus*" is widely spread, not only throughout southern Germany, but also in, for instance, Prussia and Silesia. — L. Koch has kindly furnished me with fullgrown specimens of both sexes of *S. variegatus* C. Koch and *S. lineatus* ID.; I have also myself captured the first-named species in Bavaria.

What the species is, that has given rise to LATREILLE's description of his *Ar. heterophthalma*?), it is not possible to say with certainty; and although he himself, in Gen. Crust. et Ins., I, p. 116, refers to it under his *O. variegatus*, which is *perhaps* the same as *Sph. variegatus* C. Koch, it is nevertheless very possible, that *Ar. heterophthalma* is not specifically different from *O. lineatus* LATR. (Gen. Crust. et Ins., I, p. 117). As regards this latter, I am fully persuaded that it is identical with *S. lineatus* C. Koch, for its mandibles are said to be reddish yellow, *with a dark line*; and moreover the figure given by LATREILLE (loc. cit., Tab. V, fig. 5) appears to me most nearly to resemble *S. lineatus* C. Koch. — WALCKENAE's figure of "*S. heterophthalmus*" (H. N. d. Araignées, 3, 8) is too defective, to be any guide in determining what species he had before

1) BARTA however takes up "*Sph. lineatus* C. Koch" (but not *S. variegatus* ID.) in his Verzeichn. d. Spinnen d. nördl. Böhmens (Archiv. f. die Naturwissensch. Landesdurchforschung v. Böhmen, Bd. I, Abtheil. IV, p. 137).

2) "*A. heterophthalme*; *Aranea heterophthalma*. J'ai trouvé cette espèce dans le Limousin sur une fleur sèche de carline; mais ayant négligé de la mettre dans de l'esprit de vin, la dessiccation l'a rendue méconnoissable. Je ne puis donc en donner qu'une idée très-imparfaite, telle que la mémoire me la fournit. Son corselet et ses pattes sont d'un beau clair ou pâle; son abdomen est d'un cendré mélangé de noirâtre. Son corps n'a environ que quatre lignes de longueur; elle se tient sur son cocon, qui est aplati et a une forme lenticulaire, de même que ceux des araignées crabes. — Mon ami DARGELAS m'en a envoyé de Bordeaux une seconde espèce que j'ai donnée à WALCKENAE." LATR., H. N. d. Crust. et d. Ins., VII, p. 280. — It is clear from this, that, for what he has said concerning this spider, LATREILLE *has trusted to memory*. The "seconde espèce" that he here mentions, is his *O. lineatus*, as is evident from the statement, in Gen. Crust. et Ins., I, p. 117, regarding this species: "Habitat Burdigalæ. Dom. DARGELAS".

him, and the same is the case with his descriptions loc. cit. and in Faune Franç., as also in H. N. d. Ins. Apt.: the descriptions of *S. lineatus* (in the two last mentioned works) he appears to have taken from LATREILLE. But as WALCKENAER himself refers *S. variegatus* C. KOCH to his *S. heterophthalmus* (vid. Ins. Apt., II, p. 459, 460!), I have thought it best to take up this Walckenaerian species among the synonyms of *O. ramosus* or *S. variegatus* C. KOCH. — DUGÈS<sup>1)</sup> erroneously supposes LATREILLE'S *O. variegatus* and *lineatus*, as also WALCKENAER'S *S. heterophthalmus* and *italicus*, all to belong to one and the same species; SIMON takes up<sup>2)</sup> *S. heterophthalmus* WALCK. under *O. lineatus* SIM., which is identical with *S. lineatus* C. KOCH. To what species *O. variegatus* SIM. (loc. cit., p. 290), which SIMON considers to be the same as *S. variegatus* C. KOCH and *S. Alexandrinus* SAV. et AUD., belongs, I dare not attempt to decide; but as he says of it: "palpe du mâle comme celui du précédent" (*O. lineatus*), it would appear, that under the name of *O. variegatus*, he has only described a form of *O. lineatus*. For it seems impossible, that SIMON should have failed to observe the wide difference in the form of the palpi between the males of C. KOCH'S *S. variegatus* and *S. lineatus*, provided he had really met with the first-named species, the more especially as he particularly mentions the accuracy, with which BLACKWALL has figured the palpi of the male *O. lineatus*. — As it is impossible with certainty to say what species LATREILLE'S *Ar. heterophthalma* really is, it appears to me best to drop that name: to *Sph. lineatus* C. KOCH it cannot be applied, LATREILLE himself having taken up "*O. lineatus*" as a separate species, distinct from "*Ar. heterophthalma*". I therefore call *Sph. lineatus* C. KOCH: *Oxyopes lineatus* LATR. For *Sph. variegatus* C. KOCH I propose the name *Ox. ramosus* (PANZ.). The same year, in which LATREILLE described his *Ar. heterophthalma*, PANZER (loc. cit.) gave the name of *Ar. ramosa* to the spider, which SCHÆFFER has figured in his Ic. Ins. Ratisb., II, Tab. CLXXXIX, fig. VI, and which palpably represents the in Germany so extensively spread *S. variegatus* C. KOCH. How KOCH (Die Arachn., XIV, p. 173) came to refer that spider of SCHÆFFER'S to his *Lycosa vorax*, is to me inexplicable: such a notion is completely contrary not only to the figure referred to, but also to

1) Observ. sur l. Aran., in Ann. d. Sciences Nat., 2<sup>e</sup> Sér., VI, p. 170; CUVIER, Règne Anim., Arachn., Pl. 12, fig. 6.

2) Sur quelques araignées d'Espagne, in Ann. de la Soc. Ent. de France, 4<sup>e</sup> Sér., VI, p. 289,

SCHAEFFER's account of the position of the eyes: "situs oculorum quattuor linearum", an expression which SCHAEFFER neither has used nor could use with regard to any *Lycosa* LATR. <sup>1)</sup>

In *Ox. ramosus* or *Sph. variegatus* C. KOCH the colour is very variable; nevertheless in this species the face appears always to have three white longitudinal lines, the middle one of which, at the margin of the clypeus, dilates itself into a triangular patch: the two lateral lines diverge downwards. The male's palpi are very characteristic: the lamina is broad and irregularly pear-formed dilated on the inner side towards the base, almost double as long as the patellar and tibial joints taken together; these joints are both very short, not longer than they are broad. The patellar joint has on the outer side a process directed outward and somewhat forward, which is shorter than the patellar joint itself; the tibial joint is not longer than the patellar joint, and is on its under side armed with a short and pretty coarse process directed downwards and forwards. In ♀ the cephalothorax is considerably longer than the tibia + patella of the 4<sup>th</sup> pair, and about equal to the tibia + patella of the 2<sup>nd</sup> pair; the vulva consists of a short, longitudinal costa, narrowing in front, on each side of and close to the hinder extremity of which there is an almost round and tolerably deep fovea, limited by the costa and a c-shaped, elevated border. The two pale middle bands of the cephalothorax diverge but slightly forwards, and a third pale central band, situated on the anterior part of the cephalothorax, may usually be perceived shooting in between them; at the posterior extremity they curve outwards almost in the form of an X, uniting with the pale marginal bands of the cephalothorax (Conf. KOCH's figure).

In all the specimens of *O. lineatus* that I have seen, the face has two longitudinal dark bands, which are continued as two dark lines along the mandibles. Conf. LATREILLE's description. The lamina of the male's palpi has the same form as in *O. ramosus*, but is only a little longer than the patellar + tibial joints put together. The patellar joint is hardly longer than it is broad, without any process; the tibial joint is at least double as long as the patellar joint: it has at the very base, on the outer side, downwards (under

1) GÖZE had, it is true, previously to PANZER, and already in 1778, in "LISTER's Naturgesch. d. Spinnen", p. 297, given the name *Ar. ramosa* to this spider; but as GÖZE did not consistently apply the Linnean method of nomenclature, there is no reason, in assigning priority, to take into account the names he may have employed in that work. Conf. THOR., On Eur. Spid., p. 8.

the patellar joint), a *very long* process, directed outward and forwards, and slightly curved inwards, which is as long as the tibial joint itself, on the outer (upper) side scooped out to a furrow, and the apex of which is dilated as also broadly and obliquely truncated and emarginated; the extremity of the tibial joint, on the under side, runs out into a strong process, directed forwards and somewhat downwards. The cephalothorax in ♀ is *as long as, or a little shorter than, the patella + tibia of the 4<sup>th</sup> pair*, shorter than the patella + tibia of the 2<sup>nd</sup> pair; the vulva consists of a triangular, almost heart-shaped, arched area, the point of which is directed forwards, with a more or less conspicuous central longitudinal depression and moreover a little depression on each side near the hinder corners: on either side of this area is perceived the opening to an inward directed fovea, over which foveæ the above named area is arched. The two white central bands on the cephalothorax form a very narrow V; at the posterior extremity they are not so distinctly divergent from a rounded off angle and united with the marginal bands, as they are in *O. ramosus*.

In ♂ of a species closely allied to *O. lineatus*, which I call *O. dentatus* <sup>1)</sup>, the palpi are almost of the same form as in *O. lineatus* ♂, except that the basal process of the tibial joint is short, *not longer than the diameter of the joint*, and has the form of a broad, lamellar tooth directed outward and slightly curved forward. — In *O. italicus* (WALCK.) ♂, the lamina bulbi, which at its base is narrowly but regularly oviform, and is drawn out into a long point, is almost double as long as the patellar and tibial joints of the

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1) *Oxyopes dentatus* N. — *Mas.* Cephalothorax c:a 2¾ millim. longus, in fundo nigro-fuscus; palpi ut mandibulæ ferrugineo-fusci; lamina bulbi ad basin intus fortiter et oblique dilatata, non multo longior quam partes patellaris et tibialis conjunctim; pars patellaris desuper visa æque longa atque lata, inermis; pars tibialis parte patellari plus duplo longior et, desuperne visa, paullo angustior, procursu basali in latere exteriore, infra (sub parte patellari exeunti), ipsius internodii diametrum non longitudine superanti, formam dentis lati vel lamellæ extus directæ et paullulo procurvæ assimilanti; apice, subter, procursum alterum longiorem, porrectum, apice paullo sursum curvatum ostendit pars tibialis. Pedes tenues, 1:mi paris c:a 10, 2:di 8½, 4:ti 8 millim. longi, luteo-testacei, vix distincte fusco-annulati, femoribus basi nigricantibus. Abdomen in fundo nigricans, vestigiis aræ lanceolatae in dorso, vitta clariore inclusæ; venter utrinque linea longitudinali albicanti notatus. — Long. c:a 5 millim.

Patria: Hungaria (Fiume). Unicum specimen masculum vidi, omnino detritum, quare picturam corporis describere non potui.



palpus taken together; both these joints are short, the tibial joint not longer than it is broad, something broader than the patellar joint; both are quite simple, *without any process*. The male's palpus in this species is therefore *not* "identique à celui du *lineatus*", as SIMON (loc. cit., p. 292) states.

(Pag. 542.) FAM. VI. ATTIDÆ = [Saltigradæ LATR., N.]

Vid. THOR., On Eur. Spid., p. 198, 203.

In my work above cited, I have given a short (and, as is there expressly stated, entirely provisional) view of the European Attoid-genera then known to me, and sought somewhat more distinctly to characterize the genera received by C. KOCH and SIMON, which had been either, as is in general the case with those formed by C. KOCH, too vaguely defined, or, as is the case with SIMON's generic groups, determined by characteristics drawn exclusively from but one sex, the males. In a lately published work, "Révision des Attidæ" <sup>1)</sup>, SIMON has brought forward several objections to my arrangement of the family *Attoidæ*, especially with regard to the breaking up of *Attus* (WALCK.), SIM. into several smaller genera: these genera, according to SIMON, are not tenable when we take into consideration the numerous intermediate and aberrant forms, which are found in the tracts around the Mediterranean (loc. cit., p. 134 [40]). That this really is the case, I have hitherto been unable to discover; but as I am in possession of only a comparatively scanty store of European *Attoidæ*, I cannot venture unreservedly to deny it. Some of the species belonging to the genus *Ehwops* THOR. (= *Dia* + *Parthenia* C. KOCH), which is by SIMON included in *Attus*, those namely, for which C. KOCH formed his genus *Dia* ("Groupe insignitus" SIM.), ought however to be united with *Yllenus* SIM. <sup>2)</sup>, as the characteristic, in virtue of which I had separated these two genera (the different length of the tibia of the 4<sup>th</sup> pair in proportion to the metatarsus), has turned out to be artificial (Conf. SIM., loc. cit., p. 153

1) Ann. de la Soc. Ent. de France, 4 Ser., X, p. 125. — Two parts of this treatise, which is still in progress, have already been published, one (p. 125—160) in 1871, the other (p. 161—230) in 1872.

2) "Par leur corselet et par leurs membres, les *Attus* du sixième groupe (*insignitus*) ressemblent tellement aux *Yllenus* que, si on négligeait le caractère de la patte-mâchoire, on serait forcé de les réunir (SIMON, loc. cit., p. 153 [29]).

[29]); the name *Ælurops* may perhaps be retained for the species belonging to *Parthenia* C. Коч ("Groupe fasciatus" SIM.). On the other hand it appears to me probable, that some few additional new genera ought to be formed, one, for instance, for *A. imperialis* Rossi and the spiders nearly related to it.

I find with pleasure that SIMON approves the position assumed by me, that genera, the distinction of which rests upon characteristics taken from only one sex, without regard to the other, ought not to be accepted; and I venture to express the hope and wish, that this naturalist, who by the rich materials of which he is in possession, is best fitted for the work, will soon give to the world as clear and intelligible an account of the characteristics of the females of the European Attoid-genera which he acknowledges, as he already has given of those of the males. As regards the 17 "groups" into which (loc. cit., p. 134 [10]) he divides his great genus *Attus*, they appear indeed generally to be very natural; but for one, who is not previously acquainted with a pretty large number of species, it is, as I can from my own experience testify, sometimes very difficult to decide, in which "group" of this very numerous genus to seek for an unknown species; and it would therefore be highly desirable to have — more especially for this genus and for *Heliophanus* — analytical tables of the species, such as for instance L. KOCH has given for the species of all his Drassoid-genera in his well-known work, Die Arachn.-fam. d. Drassiden; it would however here be best to have separate tables for the males and females. Whether the characteristics employed in such a table be "natural" or "artificial", is a matter of no importance, as the object of the table is only to facilitate the examination of unknown species. In treating groups comprising so many species and presenting such difficulties, as just for example the genera *Attus* (WALCK.), SIM. and *Heliophanus* C. KOCH, the practical handiness of his work is just what an author ought least of all to lose sight of. There are unhappily too many, who seem to write merely because it amuses them, and never trouble themselves about the unnecessary trouble and loss of time, which the study of their works occasions to others.

(Pag. 542.) I. SALTICUS [= *Salticus* (LATR.) 1804].

On this genus vid. THOR., On Eur. Spid., p. 208.

(Pag. 542.) 1. *S. formicarius* [= *Salticus formicarius* (DE GEER) 1778].

- Syn.*: 1778. ARANEA FORMICARIA DE GEER, Mém., VII, p. 293, Pl. 18, figg. 1—5.  
 1805. ATTUS FORMICARIUS WALCK., Tabl. d. Aran., p. 26.  
 1825. " " ID., Faune Franç., Arachn., p. 64, Pl. 5, figg. 1—3.  
 1825. " FORMICOIDES ID., ibid., p. 66.  
 1833. SALTICUS FORMICARIUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 200.  
 1837. PYROPHORUS SEMIRUFUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 29.  
 1846. " " ID., Die Arachniden, XIII, p. 24, Tab. CCCCXXXVII, fig. 1093.  
 1846. " HELVETICUS ID., ibid., p. 26, Tab. CCCCXXXVII, figg. 1094, 1095 [1096]<sup>1</sup>.  
 1861. SALTICUS FORMICARIUS BLACKW., Spid. of Gr. Brit., I, p. 64, Pl. III, fig. 36.  
 1869. PYRODERES " SIM., Monogr. d. Attides d'Eur., p. 715 (248), Pl. III, fig. 18.

WESTRING has only reproduced SUNDEVALL's description of that writer's *S. formicarius*; neither has WESTRING, nor have I, seen a Swedish specimen of this spider. — It is easy to see from DE GEER's description, that C. KOCH is mistaken in classing *Ar. formicaria* DE GEER under his *S. formicarius* or *Leptorchestes formicæformis* (LUC.), THOR., and that DE GEER's spider does not at all belong to *Salticus* C. KOCH 1837, but to *Salticus* SUND. 1833, that is, to the genus called by C. KOCH *Pyrophorus* and by SIMON *Pyroderes*. That *Ar. formicaria* DE GEER is the same as *Attus* (*Pyrod.*) *formicarius* WALCK. et SIM., might on the other hand be doubted. In favour of the identity of these species may be adduced the circumstance, that the *S. formicarius* found by SUNDEVALL in Gotland is without a doubt the same as *Attus* (*Pyrod.*) *formicarius*, as also v. NORDMANN's statement<sup>2</sup>), that he had found "*Pyroph. semirufus* C. KOCH" in Åland: it is hardly probable, that here in Scandinavia, and so high up to the North, we should have more than one species of this singular genus. Against the assumption of their identity might be urged, that in *Ar. formicaria* DE GEER (of which DE GEER was acquainted with the female only) the abdomen is stated to be "roux, avec des bandes noires et deux tâches blanches": in the two specimens of *A. (Pyrod.) formicarius*,

1) "Fig. 1095" and "Fig. 1096" in this plate should change places.

2) Erstes Verzeichn. d. in Finn. u. Lappl. gefund. Spinnen, p. 33.

which I have had the opportunity of examining (a ♂ and ♀ from Paris, with which I have been obligingly favoured by SIMON), no white spots are visible on the abdomen, nor are any such spots mentioned as distinguishing this species either by WALCKENAER, C. KOCH or SIMON, whereas C. KOCH has described what he considers as a separate species, *Pyroph. tyroliensis* (loc. cit., p. 29, figg. 1097, 1098), in which the abdomen in front of the black half of the back has *two white spots*. But also in "*Pyrod. formicarius*" the colour of the abdomen appears to be variable: SIMON says that in the *female* it "présente souvent une ou deux taches fauves transverses au dessus des filières"; BLACKWALL's figure of his *Salt. formicarius* exhibits a *white band* broken in the middle just in front of the dark posterior portion of the abdomen; and I have received from Mr L. v. KEMPELEN two specimens, preserved in spirits, of a *Salticus* from Austria, which agree far better with DE GEER's description and figure than my French specimens of *Pyrod. formicarius*, without however appearing to me specifically different from these.

In these Austrian specimens (probably imperfectly developed females) the abdomen is of a pale reddish grey colour, and has behind the middle a broad, dark, transverse band almost geminated by a pale transverse line or patch; lower down, on the sides of the abdomen, this dark band is dilated in front, and there sends out a dark tooth upwards and inwards: between the band itself and these tooth-like portions, the abdomen seems to have been covered with white hair, which probably formed a patch on both sides (as in "*P. tyroliensis*", according to C. KOCH). Behind the broad transverse band, the abdomen is of the same pale colour as in front of it, with two dark patches or angular lines, one immediately behind the band and one just above the anus. In the large pale field before the transverse band, a dark patch appears on each side (an angular band interrupted in the middle). The legs are yellowish, with black lines and the metatarsi of the first pair black. In one of the specimens the thighs of the 1<sup>st</sup> pair have a dark line on the upper side, and a short similar line on the inside, at the base; the thighs of the succeeding pairs have a black line on the fore side; the thighs and patellæ of the 4<sup>th</sup> pair are at their apices blackish; the tibiæ and metatarsi of the 4<sup>th</sup> pair have a dark line on the outer side, and (the metarsi at least) a similar line on the inner. In the other specimen the dark lines on the legs are partly effaced and not so distinct. Both specimens appear to me very similar to the spider described by C. KOCH as a ♂ *jun.*

(probably ♀ *ad.*!) of his "*P. tyroliensis*", which however, in conformity with "*P. semirufus*" and "*P. helveticus*", is stated to have the posterior part of the upper side of the abdomen of a uniform blackish colour.

My specimens of "*Pyrod. formicarius* SIM." agree perfectly, as far as the colour of the abdomen is concerned, with WALCKENAER's figure of his *Attus formicarius* in Faune Franç., Arachn. The male's mandibles are however not, as he states, *reddish*, but *blackish green*; in his *A. formicoides*, which undoubtedly, as SIMON supposes, is not specifically different from *A. formicarius* WALCK., they are said to be "d'un vert cuivré luisant", so that their colour appears to vary considerably. The French specimens in my collection agree better with C. KOCH's *P. helveticus* than with his *P. semirufus*. If these two Kochian species are really different, which to me does *not* appear probable, then it is unquestionably *P. helveticus* and not *P. semirufus*, that is identical with "*Pyrod. formicarius*", for the ♂ of this species has only *one* clearly developed tooth on the inside of the claw of the mandible, just like *P. helveticus* (see KOCH's fig. 1094), not *two*, as is said to be the case in *P. semirufus*. What C. KOCH looks upon as a ♂ *jun.* of his *P. helveticus*, is probably a ♀ *ad.* of that species.

SIMON states, that CAMBRIDGE has compared the original specimen of BLACKWALL's *Salt. formicarius* with French specimens of *Pyrod. formicarius* SIM., and found them to be identical. BLACKWALL's description of the abdomen however does not so well suit *S. formicarius* (DE GEER) as the spider, which C. KOCH calls *S. formicarius*, and which BLACKWALL and WESTRING, as also myself in Rec. crit. Aran., p. 103, erroneously referred to the true *S. formicarius* (DE GEER).

(Pag. 543.) II. ATTUS [= ***Epiblemum*** (HENTZ) 1832 + ***Marpessa*** (C. KOCH) 1846 + ***Ballus*** C. KOCH 1835 + ***Dendryphantes*** (C. KOCH) 1837 + ***Attus*** (WALCK.) 1805 + ***Ælurops*** THOR. (1870) + ***Yllenus*** (SIM.) 1868 + ***Phileus*** THOR. 1870 + ***Heliophanus*** C. KOCH 1833 + ***Euophrys*** (C. KOCH) 1835].

Concerning these genera, see THOR., On Europ. Spid., p. 206—208, 210—219, as also the present work p. 355.

(Pag. 545.) 1. **A. histrionicus** [= *Epiblemum scenicum* (CLERCK) 1757].

- Syn.: 1757. ARANEUS SCENICUS CLERCK, Sv. Spindl., p. 117, Pl. 5, tab. 13 (*salt. ad part.*)
1758. ARANEA SCENICA LINN., Syst. Nat., Ed. 10, I, p. 623 (*salt. ad part.*)
1778. " ALBO-FASCIATA DE GEER, Mém., VII, p. 287 (*salt. ad part.*)  
Pl. 17, fig. 8.
1805. ATTUS SCENICUS WALCK., Tabl. d. Aran., p. 24 (*ad part.*)
1806. SALTICUS SCENICUS LATR., Gen. Crust. et Ins., I, p. 123 (*salt. ad part.*)
1825. ATTUS " WALCK., Faune Franç., Arachn., p. 44 (*ad part.*)
- 182... " " HAHN, Monogr. Aran., 4, Pl. 1, figg. A, B.
1831. SALTICUS " ID., Die Arachn. I, p. 57, Tab. XV, figg. 43, 44  
(*salt. ad part.*)
- ?1832. EPIBLEMUM FAUSTUM HENTZ, On North Amer. Spid., in the Amer.  
Journ. of Science and Arts, XXI, p. 108.
1833. ATTUS SCENICUS SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl.  
f. 1832, p. 202.
1837. CALLIETHERA SCENICA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 31.
1837. " HISTRIONICA ID., ibid.
1846. " " ID., Die Arachniden, XIII, p. 42, Tab.  
CCCCXXXIX, figg. 1110, 1111.
1846. " SCENICA ID., ibid., p. 37, Tab. CCCCCXXXIX, figg.  
1106, 1107.
- ?1846. EPIBLEMUM FAUSTUM HENTZ, Descr. and fig. of the Aran. of the  
U. S., in Boston Journ. of Nat. Hist., V, p.  
367, Pl. XXII, fig. 17.
1856. CALLIETHERA HISTRIONICA THOR., Rec. crit. Aran., p. 68.
1856. " SCENICA ID., ibid. (*ad part.*)
1861. SALTICUS SCENICUS BLACKW., Spid. of Gr. Brit., I, p. 47, Pl. III,  
fig. 24.
1869. CALLIETHERUS HISTRIONICUS SIM., Monogr. d. Att. d'Eur., p. 650 (184).
1870. EPIBLEMUM HISTRIONICUM THOR., On Eur. Spid., p. 211.

It appears that very considerable confusion prevails with respect to the synonyms of this and the allied species. C. KOCH, who first separated "*Callieth. histrionica*" from "*C. scenica*", says of it (Die Arachn., XIII, p. 42), that it is "perhaps only a variety of the latter", and, after a careful examination of his descriptions and figures, I must confess that I think he is right in this, though here in Sweden "*C. histrionica*" is the commoner or chief form, and "*C. scenica*" the less usual, and consequently a variety of the other. With this variety, or "*C. scenica*", I, in Rec. crit., confounded *Attus lineolatus* SUND. (= *A. scenicus* Var. *a* WESTR.) — which I now consider identical with

*Callieth. zebranea* C. KOCH — and registered them together under the denomination of *C. scenica*, looking on "*C. histrionica*" as a separate species. WESTRING's description shows that he rightly united C. KOCH's *Callieth. scenica* and *histrionica* under his *Attus histrionicus*. WESTRING's *Attus scenicus* Var. *a*, or *A. lineolatus* SUND., seems on the contrary, as has already been said, to be the same as *C. zebranea* C. KOCH: his *A. scenicus* Var. *b* again is probably identical with *C. tenera* C. KOCH. WESTRING has kindly lent me ♂ and ♀ *ad.* of both Var. *a* and Var. *b* of his *A. scenicus* for examination. "Var. *a*", which, with SIMON and C. KOCH, I take to be the same as *Ar. cingulata* PANZ.<sup>1)</sup> and therefore call *Epibl. cingulatum*, I have myself found not only in Sweden but also at Kissingen in Bavaria: of "Var. *b*" (*Epibl. tenerum* N.) I have seen not only Swedish specimens, but specimens from Bavaria and Austria, the former sent me by L. KOCH, the latter by v. KEMPELEN.

The difference between *C. histrionica* C. KOCH and *C. scenica* ID. lies only in the colour, which nevertheless shows evident transitions from the one form to the other. In "*C. histrionica*" the cephalothorax has a white spot immediately above the anterior centre eyes and a similar spot behind each of the two hindmost eyes; but the first-mentioned spot is often dilated into a transverse band, which sends out a short white line straight backwards, and the two spots behind the hindmost eyes are often united into a streak angularly bent backwards, or into a patch, which is connected with a white or reddish  $\wedge$  on the posterior slant of the cephalothorax, so as to form an H- or X-shaped figure (conf. WESTRING's description!), and the cephalothorax then has the figuring which distinguishes "*C. scenica*"; should there be, in addition, small whitish angular marks between the oblique white transverse bands on the abdomen, we have at once the typical "*C. scenica*" before us, as figured in Die Arachn., fig. 1107, especially if the legs, as in such varieties is frequently the case, are considerably paler than in the form "*C. histrionica*". The colour of the upper part of the abdomen in KOCH's figure of "*C. scenica* ♂" (fig. 1106), also appears to me to show that this spider is but a variety

1) "*Aranea cingulata* cinerea, abdomine ovato nigro cingulis tribus cinereis, secunda tertia interrupta. Habitat in arboribus coniferis. Thorax depressus ater dorso macula cruciformi cinerea. Abdomen ovatum nigrum, basi cingulo semilunari cinereo, medio duabus interruptis. Pedes nigro- cinereoque variegati." PANZ., loc. cit. — The line beside the figure, that indicates the length of the animal, is 6 millim. long, wherefore *Ar. cingulata* cannot well be identical with *E. tenerum* N., which is far smaller.

of "*C. histrionica*". — The species ought of course to resume its earliest specific name, and accordingly be called *Epibl. scenicum*.

SIMON in his description of his *Callieth. histrionicus* mentions nothing, that indicates that he had seen any such varieties as those just described by me and noticed by WESTRING (*C. scenica* C. KOCH); his description is suitable to "*C. histrionica*" only. The same is the case with BLACKWALL's description and figure of that author's *Salticus scenicus*. *Callietherus scenicus* SIM. on the other hand, like WESTRING's *A. scenicus* Var. *a*, is the same as *Epiblemum cingulatum* N. Like CAMBRIDGE, L. KOCH considers this spider to be the same as *C. scenica* C. KOCH, as I see from specimens determined by these arachnologists; of *E. tenerum*, L. KOCH has sent me specimens under the name of "*C. zebranea*". Unhappily C. KOCH's type-specimens are no more in existence. As this author gives no description of the characteristic parts of the male's palpi in the species before us, I think it is best in identifying them chiefly to take into account his descriptions and figures of the females, of which his *C. tenera* ♀ (fig. 1113) is perfectly similar to *E. tenerum* N., whereas the figure he gives of *C. zebranea* ♀ (fig. 1109) closely resembles *E. cingulatum* N. The female of "*C. zebranea*" is according to C. KOCH larger than "*C. tenera* ♀". As to the males, it seems on the other hand very probable, judging from the alleged size of "*C. zebranea* ♂" and "*C. tenera* ♂", that the former is the male to "*C. tenera* ♀" and the latter to "*C. zebranea* ♀"; but as *C. zebranea* was first described in C. KOCH's Uebers. d. Arachn.-Syst., 1, p. 31, this species ought in the first place to be determined after the diagnosis given in that work, and there C. KOCH says of it, that it is "large", just as he says of "*C. histrionica*", but which certainly cannot be said of *E. tenerum* N.

As regards *C. zebraneus* SIM, the female probably belongs to *E. tenerum* N., as SIMON says he has received it from Dr L. KOCH under the name of *C. zebranea*: the male on the contrary, or *Salticus affinitatus* CAMBR.,<sup>1)</sup> is another species: Mr CAMBRIDGE, to whom I had sent a ♂ of *E. tenerum*, writes me that *S. affinitatus* is different from, though very nearly allied to this latter species: the process of the tibial joint of the male's palpus is curved, less robust and more pointed than in *E. tenerum*, but less pointed than in "*C. histrionica*".

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1) Descr. of some Brit. Spid. etc., in Transact. of the Linn. Soc., XXVII, p. 399.



The south-European *C. tenerus* SIM. (= *Saliculus mutabilis* LUC.<sup>1</sup>), according to a communication from Mr SIMON) is also a species different from, though nearly related to the German and Swedish *E. tenerum* (C. KOCH), n. I have myself captured a ♂ *ad.* at Monaco, and have received specimens of it from SIMON himself. On this species see more p. 366.

According to BLACKWALL<sup>2</sup>), his *Salt. scenicus* is also met with in North-America, in Canada. It is probably this species, that HENTZ calls *Epiblemum faustum*, and which, according to him, is common at Cambridge, Massachusetts.

Whether *Calliethera alpina* from Chamouny, described by GIEBEL (Z. Schweitzer. Spinnenfauna, p. 441), and which is said to have the "habitus of *C. histrionica*", be really a separate species, or belong to one or other of the species here under discussion, GIEBEL's short description does not enable me to decide.<sup>3</sup>)

As regards the synonyms of the older authors, it is in the first place clear that CLERCK had before him *C. histrionica*, and considered it as the *chief form* of his *Ar. scenicus*, for he says that the cephalothorax has *three white patches above*, "situated almost in a triangle" (according to the Swedish text); but he continues: "*nonnullis loco macularum stella vel etiam duabus lineolis decussatim, plerisque tamen obscure et septuose*" (in the Swedish, "*matt och otydligt*", faintly and indistinctly), which refers either to the variety which C. KOCH calls *C. scenica*, or else to his *C. zebranea* (*E. cingulatum*), or perhaps to both these forms. CLERCK's figure seems to me most to resemble "*C. histrionica*".

DE GEER in his *Ar. albo-fasciata* has evidently had in view principally *E. scenicum*, and especially the form *C. histrionica*, but he had probably also seen the here in Upsala common *E. cingulatum*, which one of his figures (fig. 9) most resembles. The *Ar. scenica* of LINNÆUS, and indeed of the older naturalists in general, not excepting O. FABRICIUS in his Fauna Grœnl., p. 227, probably indicates *E. scenicum*, though one or other of the two closely allied species may have sometimes been confounded with it.

1) Explor. de l'Algér., Arachn., p. 168, Pl. VIII, fig. 8.

2) Notes of Spid. capt. by POTTER in Canada, in Ann. and Mag. of Nat. Hist., 2 Ser., XVII, p. 34.

3) I have applied by letter to Prof. GIEBEL, requesting to borrow for examination the spiders described by him in the paper referred to; but, as he has not honoured my letters with a reply, I presume they have not reached him.

What confidence may be placed in WALCKENAER's quotations, is shown, among other things, by the manner in which he has treated C. KOCH's *Calliethera*-species. He cites *C. zebranea* not only together with *C. scenica* under his *Attus scenicus*, but also under his *Attus erraticus* (*A. tigrinus* WESTR.). He adduces *C. histrionica* under *A. psyllus* (*A. terebratus* WESTR.), and identifies *C. tenera* with *Salt. limbatus* HAHN! ' ) It would scarcely be worth while to mention all the unreasonable mistakes, which this writer has committed in citing C. KOCH's Attoidæ, were it not that many persons have been led into error by them. —

In *E. scenicum* ♂ the patellar joint of the palpus, viewed from above, is at least double as long as it is broad; the process at the apex of the outside of the tibial joint is pointed and *much bent inwards*; the extremity of the lamina is short and bent abruptly downwards, the bulbus is narrow and irregularly egg-shaped, somewhat pointed in front; towards the apex it is depressed or (when viewed from the side) slightly and regularly excavated. The vulva consists of a *large, rounded, pretty deep, dark fovea, which in the anterior part of the bottom exhibits two shallow depressions*; behind, where the fovea gradually becomes shallower, it is drawn out into a short point, divided by a short furrow into two dark tubercles or teeth.

In the male of *E. cingulatum*, the patellar joint of the palpus is nearly double as long as it is broad, the process of the tibial joint is directed forwards and outwards, *almost straight*, scarcely perceptibly curved inwards; its lower edge is almost straight, *not* dilated into an angle; the bulbus is behind the apex divided by a *very deep* depression into two parts, the posterior large, egg-shaped and strongly arched, the anterior thin, narrow and lying immediately under the anterior extremity of the lamina; the truncated and deflected apex of the lamina reaches far in front of the posterior convex division of the bulbus.

*E. cingulatum* is somewhat smaller than *E. scenicum* (the cephalothorax usually 2—2½ millim. long); the body narrower and longer.

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1) WALCK., H. N. d. Ins. Apt., IV, p. 408—410. — HAHN has not, as is stated by SIMON in his Monogr. d. Attides, p. 575 (109), given "a very imperfect description" of *S. limbatus* HAHN, but only a figure, without any description at all. WALCKENAER, on the other hand, has manufactured a description of the species (Ins. Apt., I, p. 408) from HAHN's figure. *S. limbatus* HAHN is probably nothing more than a variety of *Attus falcatus* (CLERCK), WESTR.: see that species farther on.

The pars cephalica is in the fore part, and immediately behind the white crossband above the anterior row of eyes, covered with reddish scales having a metallic lustre (which seems not to be the case in *E. scenicum*), and has on the hind part a large, almost X-formed patch or area. In uninjured specimens a short white transverse line always appears before, and a similar one behind, each of the two hindermost eyes, which lines extend downwards towards the broad white marginal band. The colour of the abdomen in the female, on the back, is either, as in C. Kocb's fig. 1109, white-grey, with three pairs of oblique black bands, whereof the first pair are short and not united with each other; the two next bands, situated in the midst of the abdomen, are curved forwards and united so as to form a  $\wedge$ , thickened at the sides of the abdomen and there curved outwards, inside which a finer and more indistinct dark  $\wedge$  is perceptible; the third pair of bands forms a figure similar so the second, but smaller. Or else the back of the abdomen in *E. cingulatum* ♀ is black, with a white, backward curved, transverse band in the extreme front, two broad, oblique, white bands, with their points more curved forwards, in the middle, and a white patch on each side of the mamillæ; along the middle of the back extends a band of greyish scales with a metallic lustre varying in red and green, commonly forming small angular marks between the larger white bands. This pale central band I have not observed in *E. scenicum*. It is generally indistinct even in the male of *E. cingulatum*, in which the abdomen is most commonly white above, with a broad, black, longitudinal central band with deep triple indentation on both sides. — The vulva consists of a rounded fovea much smaller than in *E. scenicum*, and the posterior margin of which is divided in the middle by an incision into two teeth, but not drawn out backwards, as in *E. scenicum*.

*E. tenerum* is considerably smaller than either of the two foregoing species, its cephalothorax being  $1\frac{1}{2}$  millim. or at the utmost 2 millim. long. The male is easily recognized by the palpi, which are yellowish, with the patellar joint only half as long again as it is broad, having the tibial joint's process directed forwards and but slightly outwards, obtuse and almost straight, scarcely curved inwards; the under margin of this process is dilated into a very broad angle bent inward, so that the process, seen from the under side, appears obliquely and broadly truncated at the extremity, and separated by a triangular incision from the apex of the tibial joint itself. The lamina is short, abruptly deflected at the extremity,

reaching but little over the apex of the bulbus, which is egg-shaped, pretty strongly arched along the inner side, slightly depressed at the extreme apex, and exhibits on the inner side a longitudinal furrow. The mandibles are shorter than in the preceding species, only  $\frac{1}{2}$ — $\frac{3}{4}$  as long as the cephalothorax. — The female is difficult to distinguish from *E. cingulatum* ♀ by any other criterion than her smaller size, and the more purely white colour, unsullied by any grey tint, of the abdomen (see C. KOCH's fig. 1113). The whole upper side of the cephalothorax is thickly covered with scales of a reddish metallic lustre between the white marking, which is exactly like that of *E. cingulatum*; the sides and belly of the abdomen are thickly clothed with white scales; the back also is white, with three obliquely posited black bands or patches on both sides of the reddish grey band along the middle, which band for the most part is resolved into alternating reddish grey and white angular marks. The vulva seems to be of about the same form as in *E. cingulatum*, judging from two (dried) specimens, which have been communicated to me by Mr WESTRING: it appears to consist of a rounded fovea close to the rima genitilis, and its pale margin is, behind, divided in the middle by a triangular incision into two teeth inclined somewhat backwards(?).

In the male of *Callieth. tenerus* SIM.<sup>1)</sup>, the patellar joint of the palpi is double as long as is it broad; the tibial joint is nearly such as in *E. tenerum*, but its process is *pointed and at the extremity curved inward*; the inferior margin of the process is angularly dilated, as in *E. tenerum*, but the angle is smaller and sharper than in that species, only occupying a part of the margin, so that the process, seen from the under side, is broadly emarginated between the extremity and the angle. The bulbus, which is scarcely depressed at the apex, has a little low, oblong, shining tubercle at the outer margin nearer the base. The scales of the body are much coarser than in *E. tenerum*, and also the colour is different. (Cfr. SIM., loc. cit.). SIMON's statement, that the tibial joint "ne présente pas d'apophyse proprement dit, mais il est simplement élargi et un peu dilaté du côté externe", is, as may be seen from the above remarks, quite erroneous.

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1) Monogr. d. Attides, p. 654 (188). — See also above, p. 363.

(Pag. 546.) 2. **A. scenicus** [= *Epiblemum cingulatum* (PANZ.) 1797  
+ *Epiblemum tenerum* (C. KOCH) 1846].

"Var. a" (*E. cingulatum*):

- Syn.*: †?1757. ARANEUS SCENICUS CLERCK, Sv. Spindl., p. 117 (*ad part.*).  
†1778. ARANEA ALBO-FASCIATA DE GEER, Mém., VII, p. 287, (*ad part.*:)  
Pl. 17, fig. 9.  
1797. " CINGULATA PANZ., Faun. Ins. Germ., 40, 22.  
1802. " SCENICA WALCK., Faune Par., II, p. 245 (*ad part.*).  
1805. ATTUS SCENICUS ID., Tabl. d. Aran., p. 24 (*ad part.*).  
?182.. " CORDICALIS HAHN., Monogr. Aran., 4, Tab. 2, fig. C.  
1833. " LINEOLATUS SUND., Sv. Spindl. Beskrifn., in Vet.-Akad.  
Handl. f. 1832, p. 202.  
1837. CALLIETHERA ZEBRANEA C. KOCH, Uebers. d. Arachn. Syst., 1,  
p. 31.  
1846. " " ID., Die Arachniden, XIII, p. 40, Tab.  
CCCCXXXIX, (*salt.* ♀:) fig. 1109.  
1856. " SCENICA THOR., Rec. crit. Aran., p. 63 (*ad part.*).  
1863. SALTICUS SCENICUS CAMBR., Descr. of 24 new spec., *et.*, in Zoo-  
logist, 1863, p. 8597 (37)<sup>1</sup>.  
1869. CALLIETHERUS SCENICUS SIM., Monogr. d. Attides, p. 647 (181).  
1870. CALLIETHERA SCENICA L. KOCH, Die Arachn.-fauna Galiz., p. 9<sup>1</sup>.

"Var. b" (*E. tenerum*):

- Syn.*: 1846. CALLIETHERA TENERA C. KOCH, Die Arachn., XIII, p. 43, Tab.  
CCCCXL, (*saltem* ♀:) fig. 1113.  
?1869. CALLIETHERUS ZEBRANEUS SIM., Monogr. d. Att., p. 652 (186) (*ad*  
*part.* ♀).

As regards the synonyms of these forms and the criteria for distinguishing them, see the preceding species, *Attus histrionicus* WESTR. — *Callieth. varia* C. KOCH<sup>2</sup>) is probably the young either of *E. cingulatum* or of *E. tenerum*.

(Pag. 549.) 3. **A. muscosus** [= *Marpessa muscosa* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS MUSCOSUS CLERCK, Sv. Spindl., p. 116, Pl. 5, tab. 12.  
1761. ARANEA RUMPFII SCOP., Entom. Carn., p. 401.  
1789. " MUSCOSA OLIV., Encycl. Méth., IV, p. 222.  
1802. " TARDIGRADA WALCK., Faune Par., II, p. 244.  
1805. ATTUS TARDIGRADUS ID., Tabl. d. Aran., p. 25.  
1806. SALTICUS RUMPFII LATR., Gen. Crust. et Ins., I, p. 124.

1) According to specimens determined by the author of the work here cited.

2) Uebers. d. Arachn.-Syst., 1, p. 31; Die Arachn., XIII, p. 46, Tab. CCCCXL, fig. 1114.

1831. *SALTICUS RUMPHII* HAHN, Die Arachn., I, p. 56, Tab. XV, fig. 42.  
 1833. *ATTUS STRIATUS* SUND., Sv. Spindl. Beskrifn., in Vet.-Akad. Handl. f. 1832, p. 204.  
 1837. *DENDRYPHANTES MUSCOSUS* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 31.  
 1846. *MARPISSA MUSCOSA* C. KOCH, Die Arachn., XIII, p. 63, Tab. CCCXLIII, figg. 1129, 1130.  
 1851. *ATTUS MUSCOSUS* WESTR., Förteckn. etc., p. 55.  
 1861. *SALTICUS TARDIGRADUS* BLACKW., Spid. of Gr. Brit., I, p. 63, Pl. III, fig. 35.  
 1869. *MARPISSUS MUSCOSUS* SIM., Monogr. d. Attides, p. 17 (7).  
 1870. *MARPESSA MUSCOSA* THOR., On Eur. Spid., p. 213.

"SCHÆFFER, Ic. Ins. Ratisb., III, Tab. CCXXVI, fig. v" (*Aran. ceropegia* PANZ., Syst. Nomencl., p. 189), cited by C. KOCH, cannot belong to this species, for as regards the position of the eyes, SCHÆFFER makes use of the expression "situs quadratus". The position of the eyes in the Attoidæ is by SCHÆFFER called "situs oculorum trium linearum", sometimes "quattuor linearum". — SUNDEVALL has, as is known, erroneously classed under this species *Ar. striatus* CLERCK. Concerning *A. muscosus* SUND., vid. inf. under *A. hastatus* WESTR. — WALCKENAER takes up *Ar. muscosus* CLERCK not only under his *A. tardigradus*, but also, and wrongly, under his *A. bivittatus* (H. N. d. Ins. Apt., I, p. 423). Equally wrongly he refers *Marpissa muscosa* C. KOCH to *Attus nidicolens* WALCK. (op. cit., IV, p. 411). — *A. tardigradus* SAV. et AUD. (Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 406, Pl. 7, fig. 13) does not, as WALCKENAER has already observed, belong to this species.

(Pag. 551.) 4. *A. strigipes* [= *Marpessa radiata* (GRUBE) 1859].

- Syn.: 1859. *ATTUS RADIATUS* GRUBE, Verzeichn. d. Arachn. Liv-, Kur- und Ehstl., p. 471 (57).  
 1865. *EUOPHRYS RADIATA* OHL., Arachnol. Stud., p. 10.  
 1867. " " ID., Aran. d. Prov. Preuss., p. 162.  
 1868. *MARPISSUS HAMATUS* SIM., Monogr. d. Attides, p. 20 (10).  
 1871. " *RADIATUS* ID., Révis. d. Attidæ, p. 128 (4).

Of his *Ar. strigipes*, which, like *M. muscosa*, is stated to have the 1<sup>st</sup> pair of legs "robusti" and their tibæ armed with four spines on each side, that is, three pairs of spines below, and one spine on each side, downwards, WESTRING had for his description access to only one, much bare-rubbed, imperfectly developed female specimen preserved in spirits, and which has since been lost. SIMON (Révis. d. Attidæ, loc. cit.) classes *A. strigipes* under *M. pomatia* (WALCK.), which

however is not right: WESTRING, to whom I sent a specimen of *M. pomatia*, which I had received from SIMON himself, declares that species to be different from *A. strigipes*. The spine-armature of the legs etc. in *M. pomatia* is not such as it is stated to be in *A. strigipes*. *M. pomatia*, for instance, has on the tibiæ of the 1<sup>st</sup> pair, besides the four pairs of spines which are met with on and near the under side, also at least one spine on each side towards the base. I have on the other hand seen a very young specimen of a *Marpessa* from Skåne, which exactly suits WESTRING's description of *A. strigipes*: this specimen, which I remitted to WESTRING, and in which he recognized his *A. strigipes*, belongs beyond all doubt to *M. radiata* (GRUBE), of which species I have specimens sent me by OHLERT. The correctness of this identification is confirmed by a coloured figure of the typical specimen of *A. strigipes*, which WESTRING communicated to me, and which exactly resembles "*Euophr. radiata* OHL.", when that spider is in spirits, so that only the marking on the skin itself is visible. The spine-armature on the posterior tibiæ and metatarsi is however rather variable in *M. radiata*: in one of the full-grown male specimens from Königsberg, which I received from Dr OHLERT, the hindermost tibiæ have only 3 spines, two at the apex and one nearer the base, on the under side, as is also the case in a ♀ *jun.* from the same locality, and in "*A. strigipes*", according to WESTRING. In another specimen there is also a pair of spines on each side of these tibiæ, and the hind metatarsi, besides the spines at the apex, have also a spine on the outer side nearer the base; a ♂ *ad.*, for which I am indebted to SIMON, has on the under side of the hinder tibiæ two spines at the apex and one towards the base, and moreover one spine on the outer side. In the above mentioned specimen of "*A. strigipes*" from Skåne, which is preserved in spirits and is a good deal bare-rubbed, the ground-colour of the cephalothorax is, as in the German specimens of "*Euophr. radiata*", black, with yellow-marbled sides, and three yellow, outward- and backward-radiating stripes on both sides, behind. The black interval between the two hindmost rays, which in my German specimens is of one colour and broader behind, is in this specimen of "*A. strigipes*" divided by two yellowish lines into three narrow stripes, so that here the rays may be said to be 8 in number. In a couple of the German specimens again, out of the six rays, the first are only imperfectly separated by some darker patches. The ground-colour of the abdomen is in the specimen from Skåne blackish, with a short

central stripe near the anterior extremity, two short, longitudinal, almost parallel stripes behind this, and behind them again, from the middle of the back to the anus, a series of 4 or 5 angular marks, and a pair of oblique streaks on the sides, behind; all this marking greyish yellow. In one of the German specimens the foremost stripe, in another the nearest following ones are missing. In the specimen from Skåne the abdomen has been covered with yellowish and red hair, which appears to have formed two longitudinal red bands in front and pale angular marks behind, as is the case also in a ♀ *jun.* from Königsberg. — As regards the fine colour of fullgrown undamaged specimens of *M. radiata* (upper part of the abdomen yellowish, with three longitudinal orange red bands in ♂), see OHLERT's and SIMON's descriptions.

In ♂ of *M. radiata* the tibial joint of the palpus has on its outer side a slender, forward-directed spur, curved forward at the base, blunt at the apex and about as long as the joint itself. The lamina has the base of the outer margin drawn out into a very small, backward-directed tooth; the bulbus exhibits above the apex a short, crooked spine. — OHLERT has obliged me with three full-grown males and a young female of his *Euophr. radiata*; of *M. hamatus* SIM., SIMON has kindly furnished me with a ♂ *ad.* — Concerning *M. hamata* C. KOCH, which is an entirely different species, vid. *infr.* under *A. striatus* WESTR.

Mr EISEN has, in the vicinity of Upsala, captured a male specimen of a *Marpessa*, *M. encarpata* (WALCK.) 1802, which had not before been found in Sweden. The two sexes of this species are very dissimilar: the female was, in 1829, figured by HAHN (Monogr. Aran., 5, Tab. 3, fig. C) under the name of *Attus pulchellus* (= *Calliethera pulchella* C. KOCH, Die Arachn., XIII, p. 47, Tab. CCCXL, fig. 1115; perhaps also = *C. ambigua* ID., *ibid.*, p. 48, fig. 1116). Conf. SIM., Révis. des Attidæ, p. 179 (55).

(Pag. 552.) 5. *A. brevipes* [= *Ballus depressus* (WALCK.) 1802].

*Syn.*: 1802. ARANEA DEPRESSA WALCK., Faune Par., II, p. 242 (= ♀).

?1802. " CHALYBEIA ID., *ibid.*, p. 245 (= ♂).

1805. ATTUS DEPRESSUS ID., Tabl. d. Aran., p. 27.

?1805. " CHALYBEIUS ID., *ibid.*, p. 23.

[1819. SALTICUS ANNULIPES LATR., Nouv. Dict. d'Hist. Nat., 2<sup>e</sup> Éd., XXX, p. 100].

1825. ATTUS " WALCK., Faune Franç., Arachn., p. 55 (= ♀).



1831. *SALTICUS BREVIPES* HAHN, Die Arachn., I, p. 75, Tab. XVIII, fig. 56  
(= ♀).
1834. " *HETEROPHTHALMUS* REUSS, Zool. Misc., Arachn., in Mus.  
Senck., I, p. 273 (279), Pl. XVIII, fig. 11.
1837. *EUOPHRY'S BREVIPES* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 33  
(= ♀).
1837. " *SURALIS* ID., ibid., p. 34 (= ♂).
1846. *MARPISSA BREVIPES* ID., Die Arachn., XIII, p. 58, Tab. CCCCLXII,  
fig. 1126 (= ♀)
1848. *ATTUS HETEROPHTHALMUS* ID., ibid., XIV, p. 50, Tab. CCCCLXXV,  
fig. 1308 (= ♂).
1850. *BALLUS* " ID., Uebers. d. Arachn.-Syst., 5, p. 68  
(= ♂).
1850. *SALTICUS OBSCURUS* BLACKW., Descr., cet., in Ann. and Mag. of Nat.  
Hist., 2 Ser., VI, p. 336 (= ♂).
1851. *ATTUS BREVIPES* WESTR., Förteckn. etc., p. 56 (= ♀).
1861. *SALTICUS OBSCURUS* BLACKW., Spid. of Gr. Brit., I, p. 53, Pl. III,  
fig. 28 (= ♂).
1869. *ATTUS BREVIPES* SIM., Monogr. d. Attides, p. 626 (160) (= ♀).
1869. " *HETEROPHTHALMUS* ID., ibid., p. 624 (158).
1869. *BALLUS DEPRESSUS* THOR., On Eur. Spid., p. 212 (= ♀).
1872. *ATTUS DEPRESSUS* SIM., Révis. d. Attidæ, p. 227 (103).

It cannot but appear singular, that *all* the writers who have described "*Salt. (Att. or Marp.) brevipes*", should have seen only the *female* of that species, whereas on the other hand C. KOCH had only seen the *male* of "*A. heterophthalmus*" (and BLACKWALL similarly only the *male* of *Salt. obscurus*). REUSS and SIMON indeed mention also the *female* of *S.* or *A. heterophthalmus*, but so briefly, as not to give any clear idea of the spider they had before them. (WESTRING'S *A. heterophthalmus*, a female, is quite a different species, whereof more hereafter). This circumstance is easily explained if we suppose "*A. heterophthalmus*" to be the male to "*A. brevipes*"; and that this supposition is true, I am fully convinced. This my conviction has been further confirmed by my receiving from CAMBRIDGE a ♂ and ♀ from England under the name of "*S. obscurus* BLACKW.", of which the female is identical with the spider that I, with WESTRING, consider to be C. KOCH'S *Marpessa brevipes*, and of which SIMON was kind enough to favour me with a specimen under the denomination of *A. brevipes* SIM., whereas the male is just the spider, which I have looked upon as the male to this *A. brevipes*, and which REUSS', C. KOCH'S and SIMON'S descriptions of *S.* or *A. heterophthalmus* most accurately suit. Add to this, that SIMON (loc. cit.) says, that he received from CAMBRIDGE the very type-specimen of *S. obscurus* BLACKW.

and that it is identical with *A. heterophthalmus* SIM. Now as it is utterly incredible that CAMBRIDGE should have sent SIMON and me two different species under the same name of *S. obscurus* ♂, it follows, that CAMBRIDGE, like myself, considers the two forms here in question as ♂ and ♀ of one and the same species<sup>1)</sup>.

In spite of the considerable difference in the appearance of "*A. heterophthalmus*" and "*A. brevipes*", these forms agree with each other in many important points; such an agreement for instance appears in the unusual position of the second row of eyes: in both forms these eyes are much farther, nearly double as far, from the hindermost eyes as from the lateral eyes of the anterior row; another similitude is observable in the spine-armature of the legs, which is exactly alike in both. The two posterior pairs are destitute of spines, the tibiæ of the 2<sup>nd</sup> pair have two weak spines (occasionally, though rarely, there is but one) on the under side, outwards, and their metatarsi two pairs of similar spines beneath; the 1<sup>st</sup> pair has two pairs of strong spines under the metatarsus, and two pairs of weaker spines under the tibia, which last however are often difficult to see in consequence of the hairy covering. Also in "*A. heterophthalmus*" or the male, we frequently see, at least in specimens preserved in spirits, evident signs of the paler longitudinal bands on the cephalothorax (conf. BLACKWALL's figure, loc. cit.), which are ordinarily observed in the female or "*A. brevipes*".

That *A. depressus* WALCK. is identical with the female of this species, or "*A. brevipes*", is evident from the really good description that WALCKENAER has given of it in Faune Franç., Arachn., p. 69. *A. annulipes*, which he, in the same work, takes up (from LATREILLE's description) as a separate species, is certainly identical with *A. depressus*. WALCKENAER cites under it: "*Salitique pieds annelés* LATR., Nouv. Dict. d'Hist. Nat., XXX, p. 100"; I presume that LATREILLE in that work (with which I am unacquainted), made use also of the Latin denomination *S. annulipes*, and I have therefore received it among the synonyms. — *A. chalybeius* WALCK., which SIMON places under *A. heterophthalmus*, and which WALCKENAER himself considered as identical with *S. heterophthalmus* REUSS, probably also belongs to this species; nevertheless this synonym appears to me questionable, for the legs of *A. chalybeius* are said to be black; and I have there-

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1) This is now also the opinion of SIMON, as I see from the second part of his Révis. d. Attidæ, which I received after this article was written, and shortly before it was sent to the press; Conf. the *Syn.*

fore preferred to distinguish the species by the equally old and perfectly certain specific name of *depressus*

*Dendryphantus bimaculatus* C. KOCH (Die Arachn., XIII, p. 91, Tab. CCCXLVII, fig. 1153), which WALCKENAER (Ins. Apt., IV, p. 412) classes under both his "*A. annulipes*" and "*A. bicolor*", does not belong to the species now before us, nor can I believe that it is the same as *A. bicolor* either, which, according to SIMON (Révis. d. Attidæ, p. 138 (14), is the male of *A. xanthogramma* (LATR.), WALCK.

*A. heterophthalmus* WESTR. is a species belonging to the genus *Ballus* entirely different from *B. depressus* (WALCK.): it is the female to the male which SIMON has described under the name *Attus ænescens* 1). In WESTRING'S *A. heterophthalmus* (the female) the palpi are of uniform colour, brownish yellow, as also the legs, which are of a uniform reddish or brownish yellow tint, excepting the femora and and tibiæ of the 1<sup>st</sup> pair, which are black; the thighs of this pair are considerably thicker than those of the succeeding pairs; the tibia, which, like the patella, is also thicker, is almost cylindrical, not egg-shaped, nor tapering at the end, as in *B. depressus* ♀. The eyes of the second row are little, not much, nearer to the anterior lateral eyes than to the hindmost eyes. Of this species I have only seen two Swedish, pretty much damaged, dried female specimens, of which the one was the type for WESTRING'S description; the other (sent to me from Wermland by Baron Dr C. CEDERSTRÖM) shows some traces of gold-glancing scales on the abdomen, which seem to have formed an arc in front, near the cephalothorax, an oblique line on each side somewhat before the middle, and a spot on each side towards the anus. In a male specimen of "*A. ænescens*", which SIMON kindly lent me to compare, the under side of the legs of the 1<sup>st</sup> pair is densely covered with thick, long, black hair, and only the apical half of their tibiæ, together with the thighs, of a black colour.

(Pag. 554.) \*6. *A. vulpinus* [= *Ballus* (?) *vulpinus* (WESTR.) 1851].

Syn.: 1851. *ATTUS VULPINUS* WESTR., Förteckn. etc., p. 56.

A species unknown to me, the type-specimen of which has probably been lost: Professor SUNDEVALL has at my request, but in vain, sought through his collection, in which it was originally preserved. As WESTRING says of this spider: "*Thoracis forma ut in A. brevipede*", it is probable that, like that species, it belongs to the genus *Ballus* (or perhaps *Marpessa*?), and can therefore hardly be

1) Monogr. d. Attides, p. 628 (162).

identical with *Dendryphantus auratus* C. KOCH<sup>1)</sup>, which WESTRING adduces with a note of interrogation, and which is stated to have a somewhat higher cephalothorax than *D. pini* (*hastatus*); nor can it, as SIMON supposes, be the same as *A. affinis* (LUC.), SIM.<sup>2)</sup>, which, according to SIMON, belongs to the same "groupe" of *Attus* SIM., as his *A. insignitus* or *Yllenus v-insignitus* (CLERCK), NOB.

(Pag. 555.) 7. *A. petrensis* [= *Euophrys petrensis* (C. KOCH) 1837].

Syn.: 1837. EUOPHRYS PETRENSIS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 34.

1848. ATTUS PETRENSIS ID., Die Arachn., XIV, p. 49, Tab. CCCCLXXV, fig. 1307.

1851. " " WESTR., Förteckn. etc., p. 62.

1863. SALTICUS COCCO-CILIATUS CAMBR., Descr. of 24 new spec. cet., in Zoologist, 1863, p. 8562 (2).

1869. ATTUS " SIM., Monogr. des Attides, p. 609 (143).

1870. EUOPHRYS PETRENSIS THOR., On Eur. Spid., p. 217.

1872. ATTUS PETRENSIS SIM., Révis. d. Attidæ, p. 204 (80).

The spider which C. KOCH calls *Attus petrensis*, is without a doubt the female to *Salt. cocco-ciliatus* CAMBR., of which CAMBRIDGE had the kindness to send me a ♂ and a ♀ ad. I have myself here at Upsala captured a full-grown specimen of each sex of *S. cocco-ciliatus*: the male served as the type of WESTRING's description of his *A. petrensis*; the female I transmitted to SIMON, who determined it to be "*A. cocco-ciliatus* SIM." As every word in C. KOCH's description of his *A. petrensis* suits this female, and as his figure also exactly resembles her, I see no reason to doubt their identity, and I therefore reserve to WESTRING's spider the specific name *petrensis*, which has right of priority before *cocco-ciliatus*. — German specimens of *E. petrensis*, from Münster in Westphalia, have been sent me by Mr KARSCH.

The female of this species is very unlike the male: she is destitute of the red hairy covering on the face, the palpi are yellow, with the femoral joint for the most part black, the legs yellowish, with black rings, etc. The vulva seems to consist of a tolerably large, shining, brownish area truncated behind, which in front exhibits two foveæ (?) and has a slight depression in the middle, behind, limited by a small protuberance at each corner.

1) Uebers. d. Arachn.-Syst., 1, p. 32; Die Arachn., XIII, p. 92, Tab. CCCCLXVII, fig. 1154.

2) LUCAS, Explor. de l'Algérie, Arachn., p. 161, Pl. 7, fig. 4; SIMON, Monogr. d. Attides, p. 71 (61).

# ERRATA:

|                                          |                      |
|------------------------------------------|----------------------|
| Pag. 159, line 9, for <i>longipalpis</i> | read <i>longipes</i> |
| " 206, " 15, " laterales medii           | medii antici         |
| " 236, " 20, " CINEREUS                  | XYSTICUS CINEREUS    |
| " 267, " 35, " p. 165                    | p. 205               |
| " 316, " 35, " 4 millim.                 | 4 1/2 millim.        |
| " 355, " 23, " Euro-                     | south-Euro-          |



*Prof. Louis Agassiz*  
*With the author's compliments*



REMARKS  
ON SYNONYMS  
OF EUROPEAN  
SPIDERS,

BY

T. THORELL.

*No 4.*

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(Pag. 556.) 8. *A. hastatus* [= *Dendryphantes hastatus* (CLERCK) 1757].

- Syn.*: 1757. *ARANEUS HASTATUS* CLERCK, Sv. Spindl., p. 115, Pl. 5, Tab. 11.  
 1778. *ARANEA PINI* DE GEER, Mém., VII, p. 285, Pl. 17, figg. 3–6.  
 1802. " *LUNULATA* WALCK., Faune Par., II, p. 246.  
 1805. *ATTUS LUNULATUS* ID., Tabl. d. Aran., p. 24.  
 1825. " " ID., Faune Franç., Arachn., p. 54.  
 1831. *SALTICUS PINI* HAHN, Die Arachn., I, p. 59, Tab. XVI, fig. 45.  
 1833. *ATTUS MUSCOSUS* Var. *b*, SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. 1832, p. 208.  
 1837. *DENDRYPHANTES PINI* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 32.  
 1846. " *HASTATUS* ID., Die Arachn., XIII, p. 81, Tab. CCCCXLV, figg. 1145, 1146.  
 1851. *ATTUS HASTATUS* WESTR., Förteckn. etc., p. 55.  
 1865. *DENDRYPHANTES HASTATUS* OHL., Arachnol. Studien, p. 1.  
 ?1869. *ATTUS HASTATUS* SIM., Monogr. d. Attides, p. 576 (110).  
 1869. " *BOMBYCIUS* ID., ibid., p. 577 (111).  
 1872. " *HASTATUS* ID., Révis. d. Attidæ, p. 188 (64).  
 ?1872. " *BOMBYCIUS*, ID., ibid.

Swedish specimens of this spider, which I have sent to SIMON, have by him been identified as *A. bombycius* SIM., Monogr. d. Att., l. c. I have not been able to discover any difference between my Swedish specimens of the true *A. hastatus* (CLERCK) WESTR. on the one hand, and French specimens of *Attus hastatus* SIM., Monogr. d. Att., l. c. (communicated by SIMON himself), or German specimens of *Dendryphantes hastatus* C. KOCH (communicated by L. KOCH) on the other, and I am accordingly obliged to conclude, that the two latter names indicate the same species as *A. hastatus* WESTR. or *A. bombycius* SIM. — In his Révis. d. Attidæ, p. 188 (64), SIMON restores to his *A. bombycius* its proper name, *hastatus*, and desires to have the name *bombycius* transferred to the form which he had previously called *hastatus*.

SUNDEVALL'S *Attus muscosus* Var. *b* is identical with *D. hastatus*: but I do not know with certainty to what species we are to refer *A. muscosus* Var. *a* SUND., which is described as: "rufo- vel fusco-griseus. Thorax maculis fere 8 parvis albidis, quarum 5 evidentiores crucem longitudinalem formant: antica in medio vertice inter oculos. Abdomen superne lineis 2 parallelis, parum distantibus nigro-fuscis: singula maculas 4—5 minores albidas includente" etc., and which SUNDEVALL met with "in domibus Scaniæ, eodem modo ac *A. scenicum* errantem". I am most inclined to refer it to *Marpissa radiata* (GRUBE). To the species next following, *A. medius* WESTR., to which

it is referred by WESTRING, it does not seem to me possible that it can belong, especially as SUNDEVALL has described that species under the name of *A. rudis*. Neither variety is identical with *Ar. muscosus* CLERCK, which SUNDEVALL calls *Attus striatus*.

*A. Dorthesii* SAV. et AUD. (Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, Arachn., p. 405, Pl. 7, fig. 9), which WALCKENAER (Ins. Apt., I, p. 416) classes under his *A. lunulatus*, is certainly not synonymous with *D. hastatus*. WALCKENAER in the same work, p. 405, erroneously places *Salt. pini* HAHN under his *A. bi-lineatus*, which is an entirely different species.

OHLERT has given, loc. cit., detailed and comparative descriptions of *D. hastatus* and *D. medius* (*rudis*) and shown that not only the marking and size are different in these two forms, but that there is also a difference in the relative length of the legs, and moreover that the nests in which the young are hatched, the eggs, and even the young themselves are different in these two so closely allied species. Respecting their organs of copulation etc., see the following species.

(Pag. 558.) 9. *A. medius* [= *Dendryphantes rudis* (SUND.) 1833].

Syn.: 1833. *ATTUS RUDIS* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. 1832, p. 205.

1837. *DENDRYPHANTES MEDIUS* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 32.

?1837. „ *MINOR* ID., *ibid.*

1846. „ *MEDIUS* ID., Die Arachn., XIII, p. 77, Tab. CCCCXLV, figg. 1141—1143.

1851. *ATTUS MEDIUS* WESTR., Förteckn. etc., p. 55.

1865. *DENDRYPHANTES MEDIUS* OHL., Arachn. Stud., p. 1.

1869. *ATTUS MEDIUS* SIM., Monogr. d. Attides, p. 578 (112).

SUNDEVALL's name has in this instance, as we see, priority to that of C. KOCH, and must therefore be retained. — The tibial joint of the male's palpus both in *D. hastatus* and *D. rudis* is armed on the exterior side at the apex with a short, pointed tooth: the bulb has in both species at the apex a blunt spine pointing forwards and curved downwards, and a little below it, outwards, is perceived a finer and shorter, pointed spine, curved in about the opposite direction, but often difficult to be distinguished. This last-mentioned spine seems to be somewhat stouter in *D. rudis* than in *D. hastatus*, in which it is very fine. I see no other difference in the male's palpi of

these two species. In the males of both the maxillæ have a tooth at the apex on the outer side. The vulvæ are different: in *D. hastatus* the vulva has the form of a small, brown, somewhat convex area, which it front, where it is more or less rounded, and at the sides, is bounded by a furrow; it exhibits a depression in the middle of the posterior margin. and another on each side, near the anterior margin. In *D. rudis* the vulva is somewhat larger than in *D. hastatus*; it appears to consist of a small, slightly transversal, elevated area or callus, which is rounded in front and depressed behind; immediately in front of this area is a little almost semicircular, sometimes very indistinct, depressed area, which appears to be bounded by two costæ curving towards each other, and which exhibits a small protuberance on both sides behind: it is divided into two compartments by a longitudinal septum connected with the elevated area.

SIMON's description <sup>1)</sup> of his *A. sex-punctatus* (= *A. ravidus* SIM. <sup>2)</sup>) so exactly suits such full-grown females of *D. rudis*, as have lately changed their skin, and are as yet entirely uninjured, that I should not have hesitated to consider these two species as identical, had not SIMON declared that such a female of *D. rudis*, which I sent to him, belonged to his *A. medius*, and assured me that it was decidedly different from *A. sex-punctatus* or *ravidus*. In such uninjured females of *D. rudis* the olive-yellow back of the abdomen is marked by two greyish white, almost triangular patches near the middle (and frequently two similar patches in the extreme front, united with the middle patches by two longitudinal greyish white lines); these patches are produced in the form of stripes directed obliquely downwards and backwards to the sides of the abdomen, which are usually marked with a longitudinal, irregular light band; at the posterior extremity of the back are perceived two dark, parallel, longitudinal lines, and a row of 3 or 4 white spots in each line.

(Pag. 559.) 10. **A. V-insignitus** [= *Yllenus v-insignitus* (CLERCK) 1757].

Syn.: 1757. ARANEUS LITERA V INSIGNITUS CLERCK, Sv. Spindl., p. 121,

Pl. 5, tab. 16. } (= 3).

1757. „ V INSIGNITUS ID., ibid., p. 154.

1) Monogr. d. Attides, p. 579 (113).

2) Ibid., p. 571 (105).

1757. ARANEUS LITERA V NOTATUS ID., *ibid.*, p. 123, Pl. 5, tab. 17. } (=♀).  
 1757. " V NOTATUS ID., *ibid.*, p. 154. }  
 1789. ARANEA INSIGNITA OLIV., *Encycl. Méth.*, IV, p. 220.  
 1789. " PUNCTATA ID., *ibid.*  
 1802. " LITTERATA WALCK., *Faune Par.*, II, p. 247. } (=♀).  
 1805. ATTUS LITTERATUS ID., *Tabl. d. Aran.*, p. 24. }  
 1805. " QUINQUE-PARTITUS ID., *ibid.* p. 25 (=♂).  
 1833. " INSIGNITUS SUND., *Sv. Spindl. Beskr.*, in *Vet.-Akad. Handl.*  
 1832, p. 211.  
 1834. SALTICUS QUINQUE-PARTITUS HAHN, *Die Arachn.*, II, p. 41, *Tab.*  
 LV, fig. 126.  
 1837. EUOPHRYS QUINQUE-PARTITA C. KOCH, *Uebers. d. Arachn.-Syst.*, 1, p. 33.  
 1848. " " ID., *Die Arachn.*, XIV, p. 27 (*ad part.*:  
 ♂), *Tab. CCCCLXXXIII*, fig. 1296.  
 1850. DIA QUINQUE-PARTITA ID., *Uebers. d. Arachn.-Syst.*, 5, p. 64.  
 1856. ATTUS V-INSIGNITUS THOR., *Rec. crit. Aran.*, p. 70.  
 1861. SALTICUS NIDICOLENS CAMBR., *List of new and rare Spid.*, *cet.*, in  
*Zoologist*, 1861, p. 7945 (=♀) 'i).  
 1867. EUOPHRYS STRIATA OHL., *Aran. d. Prov. Preuss.*, p. 161 (*salt. ad part.*).  
 1868. ATTUS INSIGNITUS SIM., *Monogr. d. Attides*, p. 64 (54).  
 1870. ÆLUROPS V-INSIGNITUS THOR., *On Eur. Spid.*, p. 219.

MARTYN in his translation of CLERCK's work (Aranei, or a Nat. Hist. of Spid. etc., p. 57) had already exchanged the *double* ∇ employed by CLERCK for a *single*, so that in MARTYN's work this spider is called "*Ar. V insignitus*". In my Rec. crit., loc. cit., I have for typographical reasons used the same symbol. That the *female* also (CLERCK's *Ar. V notatus*) has in MARTYN (p. 58) received the name *Ar. V insignitus*, is probably the result of a lapsus calami: no one who has attentively examined MARTYN's work, will be like to suppose it probable that he was in a condition to discover, that these two species of CLERCK's are in fact only the different sexes of one and the same species, which was first shown in my Rec. crit. — The word "*litera*" in both CLERCK's denominations needs not to be considered as an essential part of the trivial name; this is evident from its omission in the register to CLERCK's work, where these names are written "*Ar. V insignitus*" and "*Ar. V notatus*". SUNDEVALL and SIMON call this species "*Attus insignitus*", but they thus exclude the very *symbol*, by which CLERCK describes it as marked (*insignitus* or *notatus*).

The name "*A. navaria* LISTER", found among the synonyms of this species in SIMON, is not due to LISTER but to GÆZE, who in his

1) According to a communication from the Rev. O. P. CAMBRIDGE himself.

appendix to MARTINI's translation of LISTER's famous work (LISTER's *Naturgesch. d. Spinn.*, p. 245), which he edited, rebaptized CLERCK's *Ar. V insignitus* as *Ar. navaria*. As I have above (p. 353) stated, I do not admit among the synonyms GÉZE's appellations, any more than those of other authors who do not consistently observe the now universally adopted binomial method of nomenclature: in determining questions of priority in fact no notice can be taken of names of this description. Vid. THOR., *On Europ. Spid.*, p. 7.

Under this species WESTRING classes *Attus litteratus* WALCK., and in this it appears to me certain that he is right, and that WALCKENAER's *A. litteratus* is the female of his *A. quinque-partitus*. WALCKENAER, it is true, says (H. N. d. Ins. Apt., I, p. 403) that the description he had previously (in *Faune Franç.*, *Arachn.*, p. 41) given of this last species, was taken from a female; but this is evidently a mistake, for the said description only suits the male: the two sexes in this species are very dissimilar (Conf. Rec. crit. Aran., p. 70), and when WALCKENAER says: "le mâle diffère peu de la femelle", it is clear that he had no idea of what the real female to his *A. quinque-partitus* is; whereas the description of "*A. litteratus*" in *Faune Franç.*, *Arachn.*, p. 43 (Pl. 5, fig. 6?'), exactly suits that female. I think therefore that C. KOCH and SIMON<sup>2)</sup> are mistaken in identifying *A. litteratus* WALCK. with *Yllenus festivus* (C. KOCH) 1834 (= *Euophrys striata* ID., *Die Arachn.*, XIV, p. 1, where *Ar. striatus* CLERCK and *Ar. V notatus* ID. are erroneously taken up as synonyms). It is especially to be remarked, that according to WALCKENAER (*Faune Franç.*, loc. cit.) the cephalothorax of *A. litteratus* has "deux accents noirs proche la tête"; in *Faune Par.*, II, p. 247 it is even said: "un ou deux v ou accents circonflexes l'un dans l'autre": this is the case in *Y. v-insignitus* (where these accents form a v, and are bounded on one or both sides by a light stripe), but not in *Y. festivus* (C. KOCH). When WALCKENAER under his *A. litteratus* takes up *Ar. litera V notatus* CLERCK, it is pretty clear, that he had observed this V-shaped mark on his *A. litteratus*, and that it is to it that the specific name *litteratus* refers. That WALCKENAER himself refers *Euophrys festiva* C. KOCH to *A. litteratus* is not of the smallest consequence, as WALCKENAER's identifications of most of KOCH's Attoid-species appear

1) In H. N. d. Ins. Apt., I, p. 414, WALCKENAER refers to this figure under his *A. virgulatus* and says: "La fig. 6 est à tort attribuée à la lettrée" (*A. litteratus*); but nevertheless p. 419 he takes up the same figure under *A. litteratus*.

2) SIMON, *Monogr. d. Attides*, p. 68 (58); C. KOCH, *Die Arachn.*, XIV, p. 1.

to indicate that he scarcely looked at the descriptions and figures that he cites. He even refers *Dendryphantès medius* C. KOCH (see preceding species) and *Attus capito* LUG. <sup>1)</sup> to *A. litteratus*!

OHLERT has sent me a ♀ *jun.* of *Y. v-insignitus* under the name of *Euophrys striata* OHL. — Concerning the real *A. striatus* (CLERCK), vid. infr. in "*Attus striatus* WESTR."

The spider, which C. KOCH has figured as the *female* to his *Euophrys quinque-partita* (Die Arachn., XIV, fig. 1297) bears not the slightest resemblance to the real female of that species, and appears to me to be merely a form of *Attus crucigerus* WALCK. The female of *Y. v-insignitus* was in fact unknown to C. KOCH.

*Attus Redii* SAV. et AUD. <sup>2)</sup> which WALCKENAER <sup>3)</sup> includes under his *Att. quinque-partitus*, is undoubtedly a totally different species.

SCHÆFFER's figure in Ic. Ins. Ratisb., I, Tab. XXXV, fig. VIII (*Ar. decem-guttata* PANZ.), as also *Attus Gesneri* SAV. et AUD. <sup>4)</sup>, which WALCKENAER has taken up under *A. litteratus* together with the real synonym *Ar. V notatus* CLERCK, are very uncertain identifications. *Ar. V notatus* is by SUNDEVALL erroneously made synonymous with his *A. pubescens* (loc. cit., p. 206).

*A. nidicolens* WALCK. is a widely different species from *Y. v-insignitus*, and is identical with *A. phrygianus* SIM., Monogr. d. Attides, p. 32 (22). Conf. SIM., Révis. d. Attidæ, p. 141 (17). No one of the species which WALCKENAER (H. N. d. Ins. Apt., I, p. 414 and IV, p. 411) refers to his *A. nidicolens*, appears really to be identical with that spider.

In *Y. v-insignitus* the vulva has the form of a small area rounded off in front and at the sides: this area exhibits two furrows diverging backwards, which in the form of a  $\Lambda$  enclose a reddish brown triangular area. In the only fullgrown female specimen I have seen of *Y. festivus* (from Silesia, kindly sent me by Dr ZIMMERMANN) the vulva appears to consist of a transversal area rounded before and at the sides, the border of which is elevated all round, but especially behind, where it is slightly emarginated: it is destitute of the  $\Lambda$ -shaped depression, which distinguishes the vulva in *Y. v-insignitus*. The double  $\nabla$ -shaped pale mark in the extreme front of the cephalothorax in this species is also absent in *Y. festivus*, in the

1) In BARKER-WEBB, H. N. d. Iles Canaries, Anim. Art., p. 27, Pl. 7, fig. 8.

2) Descr. d. l'Égypte, 2<sup>e</sup> Éd., XXII, p. 408, Arachn., Pl. 7, fig. 21.

3) H. N. d. Ins. Apt., I, p. 403.

4) Loc. cit., p. 406, Pl. 7, fig. 12.

female of which on the contrary the cephalothorax, as in the male, usually displays two longitudinal light bands on the skin itself. The females of these two species are in fact pretty much alike, but the males on the other hand (compare C. KOCH's figures) so dissimilar, that no confusion between them is possible. — SIMON has had the kindness to favour me with a ♂ *ad.* and a ♀ *jun.* of his *A. litteratus*, or *Y. festivus* C. KOCH, for the purpose of comparison.

(Pag. 561.) 11. *A. pubescens* [= *Attus pubescens* (FABR.) 1775].

- Syn.*: ?1755. *ARANEA PUBESCENS* FABR., Syst. Ent., p. 438.  
 ?1805. *ATTUS* " WALCK., Tabl. d. Aran., p. 23.  
 1825. " " ID., Faune Franç., Arachn., p. 43.  
 1831. *SALTICUS* " HAHN, Die Arachn., I, p. 68, Tab. XVII, fig. 51.  
 ?1834. " *SCOLOPAX* REUSS, Zool. Misc., Arachn., in Mus. Senckenb. I, p. 270 (276), Pl. XVIII, fig. 9.  
 1834. " *SPARSUS* BLACKW., Researches in Zool., p. 417 (*sec. Spid.* of Gr. Brit.).  
 1848. *EUOPHRYA PUBESCENS* C. KOCH, Die Arachn., XIV, p. 9, Tab. CCCCLXX, figg. 1278, 1279.  
 1850. *INO PUBESCENS* ID., Uebers. d. Arachn.-Syst., 5, p. 63.  
 1861. *SALTICUS SPARSUS* BLACKW., Spid. of Gr. Brit., I, p. 49, Pl. III, fig. 25.  
 1863. " *TEREBRATUS* CAMBR., Desc. of 24 new spec., *cet.*, in Zoologist, 1863, p. 8598 (37').  
 1869. *ATTUS PUBESCENS* SIM., Monogr. d. Attides, p. 543 (77).  
 1871. *SALTICUS PRATINCOLA* CAMBR., Descr. of some Brit. Spid., *cet.*, in Transact. of the Linn. Soc., XXVII, p. 403').

The above citations from FABRICIUS and WALCKENAER are, it is true, uncertain; they might with about equal probability be referred to *A. floricola* (C. KOCH) = *A. pubescens* SUND., under which e. g. SUNDEVALL includes them. But as the spider here described by WESTRING is now almost universally called *A. pubescens*, it is best to leave it in possession of the name. — WESTRING has sent me his type-specimens (of both sexes) of the species here described; they agree perfectly with the specimens, both male and female, from Bavaria, which I have received from L. KOCH, and which I have transmitted to CAMBRIDGE, who has declared them to be identical with his *Saltic. terebratus*; *S. sparsus* BLACKW., of which CAMBRIDGE had the type-specimen to examine, is according to him<sup>2)</sup> only a darker form of the

1) According to specimens supplied by the Rev. O. P. CAMBRIDGE.

2) CAMBRIDGE, Descr. of some Brit. Spid., etc., p. 403.

same species. Consequently *S. sparsus* BLACKW. and *S. terebratus* CAMBR. are not, as CAMBRIDGE (loc. cit.) and after him SIMON <sup>1)</sup> have supposed, the same as the to me unknown *Euophrys pratineola* C. KOCH <sup>2)</sup>. CAMBRIDGE has himself had the kindness to inform me, that the statement, on which that assumption was founded, was the result of a mistake. I have also received from CAMBRIDGE a ♂ and ♀ of his *S. terebratus*, and from SIMON an *A. pubescens* SIM., exactly agreeing with my Swedish and German specimens of *A. pubescens* WESTR. — As regards the sexual organs of *A. pubescens*, see the next article, *A. terebratus* WESTR.

*Salticus scolopax* REUSS, which C. KOCH (Die Arachn., XIV, p. 1) refers to *Euophrys striata* or *Yllenus festivus* (C. KOCH), n., but to which REUSS' description as regards the marking of the abdomen is far from applying, appears to me to be nothing else than an *A. pubescens* (FABR.), n. Respecting *Y. festivus*, see the preceding species.

*Ar. Marcgravii* SCOP. (Ent. Carn., p. 401), which SIMON, with a note of interrogation, refers to this species, cannot belong to it, as the abdomen is said to be "immaculatum", but is undoubtedly identical with *A. arcuatus* (CLERCK), under which it is also taken up by SIMON. C. KOCH under his *E. pubescens* mentions *Ar. Marcgravii* SCHRANCK (Fauna Boica, III, 1, p. 238); this is a very uncertain synonym, though it is true that SCHRANK says of his *Ar. pubescens*, which probably is the same as *E. pubescens* C. KOCH, that it is perhaps nothing else than an *Ar. Marcgravii* (loc. cit., p. 239). On the other hand I should think it not improbable, that *Ar. truncorum* SCHRANK (Enum. Ins. Austr., p. 531) is, at least *ad partem*, to be referred to this species, for the male's palpus clava is said to be "subtus appendiculata"; nevertheless the "oculi 1<sup>mi</sup> paris iride lutea" and "pedes primores crassi" lead to a contrary conclusion, or indicate a confusion with some other species, perhaps *A. floricola* (C. KOCH).

SIMON considers *Ar. pugnae* ROSSI (Fauna Etr., II, p. 135) to be the same as *A. pubescens*, which does not appear to me probable <sup>3)</sup>.

1) Révis. d. Attidæ, p. 163 (39).

2) Die Arachn., XIV, p. 32, Tab. CCCCLXXXIII, fig. 1299.

3) The following species, which is closely allied to *A. pubescens* and appears to be new, may here be described.

*Attus rapax* N. nigricanti-fuscus, testaceo-cinereo-variatus, pedibus fusco-testaceis, fusco-annulatis; cephalothoracis dorso striis duabus mediis brevibus longitudinalibus, altera inter oculos, altera versus declivitatem posticam, macula



(Pag. 564.) 12. *A. terebratus* [= *Attus terebratus* (CLERCK) 1757].

- Syn.*: 1757. ARANEUS TEREBRATUS CLERCK, Sv. Spindlar, p. 120, Pl. 5, tab. 15.  
 ?1758. ARANEA TRUNCORUM LINN., Syst. Nat., Ed. 10, I, p. 623.  
 1789. " TEREBRATA OLIV., Encycl. Méth., IV, p. 222.  
 1802. " PSYLLA WALCK., Faune Par., II, p. 245.  
 1805. ATTUS PSYLLUS ID., Tabl. d. Aran., p. 24.  
 1825. " " ID., Faune Franç., Arachn., p. 45.  
 1848. EUOPHRYS TEREBRATA C. KOCH, Die Arachn., XIV, p. 12, Tab. CCCCLXX, figg. 1280, 1281.  
 1850. INO TEREBRATA ID., Uebers. d. Arachn.-Syst., 5, p. 63.  
 1869. ATTUS TEREBRATUS SIM., Monogr. d. Attides, p. 545 (79).

Respecting *Ar. truncorum* LINN., which by C. KOCH and SIMON is erroneously referred to *Heliophanus muscorum* (WALCK.), a species hitherto not met with in Sweden, vid. THOR., Rec. crit. Aran., p. 91.

utrinque pone oculos posticos, lineisque duabus obliquis posticis notato; abdominis maculis dorsualibus utrinque tribus, postica magna, anterioribus parvis, cum lateribus late et inæqualiter testaceo-cinereis; vulva ex tuberculis duobus nigro-fuscis constanti. — ♀ ad. Long. cæ 6½ millim.

*Femina.* — *Cephalothorax* pæne 3 millim. longus et 2½ millim. latus, in lateribus leviter rotundatus, inter oculos sat fortiter declivis, fusco- et pallido-variatus: in dorso fuscus, maculis et striis testaceo-cinereis, e quibus præsertim conspicuæ sunt macula utrinque pone oculos posticos, stria brevis longitudinalis in medio quadranguli oculorum, alia stria fortiori versus declivitatem posticam, lineæque 2—3 angustæ, obliquæ, parallelæ, foras et retro directæ in parte postica; quadrangulus oculorum utrinque lineæ angusta pallida limitata; latera cephalothoracis pallidiora. Clypeus pilis testaceo-cinereis vestitus; annulus quoque pilorum circa oculos anticos medios testaceo-cinereus. Quadrangulus oculorum glaucorum duplo fere brevior quam longior, postice perparum angustior quam antice; series oculorum antica evidentur recurva; oculi seriei 2:dæ omnino in medio inter anticos laterales et oculos seriei 3:tiæ positi. *Mandibulæ* rufo-piceæ. *Palpi* et *pedes* fusco-testacei, cinerascanti-pubescentes, nigro-pilosi; palpi parum fusco-maculati, pedes annulis fuscis: binis in femoribus tibiisque et metatarsis saltem posticis, in patellis saltem singulo; tarsi apice, postici basi quoque, plus minus distincte infuscati. Pedum longitudo 4, 1, 2, 3: 4:ti paris 8, patella + tibia eorum 2½ millim.; 1:mi paris cæ 4¾, 2:di 4½, 3:tii paris parum breviores quam 2:di. Tibiæ anteriores paribus aculeorum 3, metatarsi anteriores paribus 2 subter armati; tibiæ et metatarsi posteriores aculeis pluribus. *Abdomen* sat breviter ovatum, fusco- et testaceo-cinereo-variaturum, mamillis exsertis; dorsum fuscum, vitta paullo clariore angusta media parum distincta, et utrinque apud hanc vittam maculis tribus testaceo-cinereis, duabus anterioribus parvis (media fere y-formi), postica magna, paullo pone medium dorsi sita; pone has maculas, supra anum, duæ vel tres lineæ vel maculæ parvæ angulatæ ejusdem coloris conspiciuntur. Latera abdominis fascia lata testaceo-cinerea undique occupantur; margo superior hujus fasciæ inæqualis procursum intus directum paullo pone maculas dorsi medias

Respecting *S. terebratus* CAMBR. (and *S. sparsus* BLACKW.), see the preceding species, *A. pubescens* WESTR. — WALCKENAER erroneously refers *Calliethera histrionica* C. KOCH to his *Attus psyllus* (Ins. Apt., IV, p. 409). — The vulva of the female *A. terebratus* consists of a little brown, rounded, horny area, in the middle of which appear two very small foveæ, close together, occupying a slight, rounded depression, which stretches backward to the rima genitales in the form of a fine furrow bordered by two narrow, slightly elevated lines. In *A. pubescens* the vulva consists of a blackish brown area, which is in a great measure occupied by a tolerably large, shallow, rounded fovea; the posterior margin of this area is notched in the middle, with the corners rounded off. The males of *A. terebratus* and *A. pubescens* are easily distinguished by the different form of the process on the tibial joint of the palpus: in *A. terebratus* that process is pointed and sharply bent inwards, in *A. pubescens* it is very broad, almost mussle-shell-formed, and rounded at the apex.

(Pag. 566.) 13. **A. fasciatus** [= *Ælurops fasciatus* (HAHN) 182..].

- Syn.*: 182.. ATTUS FASCIATUS HAHN, Monogr. Aran., 4, Pl. 1, fig. D (= ♀).  
 1831. SALTICUS „ ID., Die Arachn., I, p. 54, Tab. XIV, fig. 41.  
 1837. EUOPHRYS FASCIATA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 33 (= ♀).  
 1848. „ APRICA ID., Die Arachn., XIV, p. 4, Tab. CCCCLXIX, fig. 1274 (= ♂).  
 1850. INO APRICA ID., Uebers. d. Arachn., Syst., 5, p. 63.  
 1850. PARTHENIA FASCIATA ID., ibid., p. 65.  
 1851. ATTUS NIGER WESTR., Förtekn. etc., p. 57.  
 1869. „ FASCIATUS SIM., Monogr. d. Attides, p. 552 (86).

*Attus niger* WALCK. <sup>1)</sup>, which C. KOCH (as also WESTRING loc. cit.) cites with an interrogation, is probably a different spider, though

emittit, et cum maculis ejus anticis et posticis plus minus distincte conjunctus est. *Venter* versus latera testaceo-cinereus, secundum medium vitta obscuriori. *Vulva* ex costa transversa, in medio impressa, sive ex tuberculis duobus nigro-fuscis ante rimam genitalem constare videtur. — *Mas* ignotus.

*Att. pubescenti* (FABR.), N. affinis, sed paullo major, et colore paullo alio formaque vulvæ præsertim distinguendus. — Feminam hic descriptam, a Cel. v. KEMPELEN dono mihi datam, Cel. E. SIMONI communicavi, qui eam ♀ *A. agilis* SIM. (Monogr. d. Attides, p. 539 (73)) esse suspicatus est. Verus *Salt. agilis* HAHN, qui multo minor est, certe alia species. De eo vid. infr., in *A. tigrino* WESTR.

Patria: Austria? (v. KEMPELEN).

1) *A. niger* WALCK. is thus described in Faune Franç., Arachn., p. 56: "(Long. 2 lig.) Tête et corselet noirs, abdomen à dos et ventre noirs, pattes et

WALCKENAER himself, it is true, (Ins. Apt., IV, p. 411) takes up *Euphr. aprica* C. KOCH under his *A. niger*: SIMON <sup>1)</sup> has in fact described an entirely different species (a female) of the genus *Attus* sens. strict. under the name of *A. niger* WALCK. As regards *A. niger* SUND. et WESTR., vid. infra. Neither does *A. fasciatus* WALCK. (Ins. Apt., I, p. 404), which is cited by WESTRING und SIMON, appear to me to be the same as *A. fasciatus* (HAHN), WESTR.: it is probably identical with *Salt. Bresnieri* LUC. <sup>2)</sup>. The male of *Æl. fasciatus* (HAHN) has *not*, as *both* sexes of *A. fasciatus* WALCK. are stated to have, and as *S. (Æl.) Bresnieri* certainly has, *three* white bands on the abdomen. WALCKENAER's description of the form of these bands and of the male's palpi is moreover more suitable to *Æl. Bresnieri* than to *Æl. fasciatus*. The abdomen in the ♂ of this last species is black, usually with a greenish metallic lustre, and *one single, shortened* pale line on the back: this line commences immediately above the mamillæ and is there whitish, but in proceeding forwards becomes reddish and more indistinct; it would seem sometimes to be altogether absent, at least it is not mentioned by SIMON, loc. cit. The female's cephalothorax has two more or less pure white bands on the back, as also white borders; her abdomen has three similar bands, of which the side-bands at least are pretty broad. The legs are brown or yellowish, with black rings. The vulva is principally formed of two large, round foveæ situated close together. The female of *Æl. Bresnieri* differs from *Æl. fasciatus*

palpes noirs. L'extrémité des pattes et l'attache du corselet et de l'abdomen sont de couleur grise. Les mandibules sont aussi noires, à l'exception de leur extrémité, qui est rouge. Les pattes sont presque égales en longueur; cependant la quatrième et la première paires surpassent sensiblement en longueur les deux paires intermédiaires. La quatrième paire est un peu plus longue que la première, et la troisième un peu plus que la seconde. Les cuisses en dessus sont noirs.<sup>2)</sup>

1) Révision d. Attidæ, p. 168 (44).

2) Explor. de l'Algérie, Anim. Artic., p. 154, Pl. 7, fig. 8. — *Euophrys lineata* C. KOCH (Die Arachn., XIV, p. 43, Tab. CCCCLXXIV, fig. 1303) appears to me to be the male of *Æl. Bresnieri*. It has according to KOCH on the abdomen *three* and on the cephalothorax *four* pure white longitudinal bands, the two lateral bands of which do *not* extend to the edge of the cephalothorax. SIMON however makes it a separate species (*Att. lineatus* SIM.) and states that it has *two* bands on the cephalothorax. His description differs also in other respects from that of C. KOCH, although it is said to be made from that writer's type-specimen. — Of *Att. Bresnieri* SIM., I have among other specimens a ♂ and ♀ ad. with which I have been favoured by Mr SIMON himself.

♀ by its smaller size, its yellow legs etc.; the pure white lines on the back are narrow, almost mere lines; the cephalothorax has *four* pure white bands, of which the two external ones are situated rather high above the margin of the cephalothorax, and extend on to the clypeus, where they meet. The legs of *Æl. Bresnieri* ♂ are not always black; sometimes they are of a dirty yellow colour.

WALCKENAER, who had seen the type-specimen of *Ar. trilineata* FABR. (Ent. Syst., II, p. 423), of which however the cephalothorax was all that remained, says (Ins. Apt., I, p. 405) that it "pourrait bien être la même espèce" as his *A. fasciatus*. As however FABRICIUS' description gives no grounds for such an assumption, and as WALCKENAER expresses himself so dubiously, there does not appear to me to be any reason for adopting the specific name *trilineatus* FABR. either for *Æl. Bresnieri* or *Æl. fasciatus*.

(Pag. 568.) 14. **A. striatus** [= *Attus striatus* (CLERCK) 1757].

Syn.: 1757. ARANEUS STRIATUS CLERCK, Sv. Spindl., p. 119, Pl. 5, tab. 14.

1789. ARANEA STRIATA OLIV., Encycl. Méth., IV, p. 222.

1858. ATTUS (EUOPHRYS) STRIATUS THOR., Om Clercks Orig.-spindelsamling, in Öfvers. af Vet.-Akad. Förhandl., XV (1858), p. 151.

That *Attus striatus* WALCK. (Ins. Apt., I, p. 422), under which WALCKENAER includes *Ar. striatus* CLERCK, is a species totally different from this latter, may be easily seen from the description of CLERCK's type-specimen, which I have given loc. cit., and which has been copied by WESTRING: it scarcely in any single particular suits *A. striatus* WALCK. The form as well as the colour of the cephalothorax, the colour of the legs etc. etc. are altogether different in the two species. — *Att. striatus* WALCK. et SIM. is, according to SIMON, identical with *Salticus Boryi* described and figured by LUCAS 1845 <sup>1)</sup> in Explor. de l'Algér., Anim. Artic. (Arachn.), p. 157, Pl. 7, fig. 3.

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1) The first number of "Explor. de l'Algérie. Zool. H. N. d. Anim. Artic. par H. LUCAS" appeared in 1845, and comprised, together with text, the first six plates (See ENGELMANN, Bibliotheca Hist.-Nat., p. 635). WALCKENAER says in H. N. d. Ins. Apt., IV, p. 414, 1847, that he then possessed the text, but not all the plates to this work of LUCAS. Probably *Salt. Boryi* had already been described in the 1st Number, though the figure was on Pl. 7 and accordingly in the 2nd Number,

*Marpissa hamata* C. KOCH <sup>1)</sup> and *Icelus notabilis* C. KOCH <sup>2)</sup>, which I (On Eur. Spid., p. 213) had assumed to be, the former the female and the latter the male of *Attus striatus* WALCK., SIM., are according to SIMON <sup>3)</sup> two separate species, the first identical with *A. vicinus* SIM. <sup>4)</sup>, the latter with *Salt. erraticus* LUC. <sup>5)</sup> or *A. Lucasii* SIM. <sup>6)</sup>. These three species are, according to SIMON, "extrêmement voisines et difficiles à distinguer" <sup>7)</sup>. *Marpissus hamatus* SIM., Monogr. d. Attid..

1) Die Arachn., XIII, p. 67, Tab. CCCCXLIII, fig. 1132.

2) Ibid., p. 174, Tab. CCCCLX, fig. 1225.

3) Révis. d. Attidæ, p. 183 (59).

4) Monogr. d. Attides, p. 569 (103).

5) Explor. de l'Algérie, Anim. Art., p. 149, Pl. 6, fig. 5.

6) Monogr. d. Attides, p. 568 (102).

7) As I only possess a single couple of *A. striatus* SIM. (from Paris, kindly sent to me by SIMON himself), a ♀ of *A. Lucasii* SIM. (for which also I am indebted to SIMON) and another ♀, which I captured in Rome, and which appears to me to be a *M. hamata* C. KOCH, though I cannot distinguish it from "*A. Lucasii*", it would be rash in me to make any objections to these determinations of SIMON. I ought however to mention, that the above-mentioned female of *A. Lucasii* has two rusty red transversal bands on the pars cephalica, exactly like C. KOCH's figure of *M. hamata*, and which transversal bands SIMON has himself observed in the male of "*A. Lucasii*", whereas the colour of the cephalothorax in *A. vicinus*, as far as I can judge from SIMON's description, appears to be rather different. I have also in "*A. striatus*" ♀ observed two similar transversal bands on the cephalothorax, though fainter and more approaching to yellow. — Perhaps the mandibles of the males may offer reliable features for determining the forms in question, if they really be different species: it is unfortunate that the descriptions furnished by SIMON of these organs in two of them, *A. striatus* and *A. hamatus* (*vicinus*), are so defective. In the ♂ of *A. striatus* in my possession the mandibles, which are furnished with a strongly elevated edge along the greater part of the outer side, are on the inner side emarginated, so as to leave between them a narrow ob-ovate interval: at the apex they are broadly and obliquely truncated, and the inner corner of the apex forms a long and coarse protuberance, which, at the extremity of the imperfectly developed claw-furrow's anterior border, is drawn out into a large, lamellar tooth, which is broad and rather obliquely truncated at the extremity, and slightly emarginated: these broad inward- and downward-directed teeth form inferiorly, where they touch each other, the border of the egg-shaped interval between the mandibles. At the posterior margin of the claw-furrow, towards its apex, there is a little short and coarse, conical tooth. SIMON mentions *three* teeth at the claw-furrow in "*A. striatus*" and "*A. hamatus*", of which the two situated on the *inner* margin are in *A. hamatus* stated to be "élevées sur une sorte de tubercule, qui n'existe pas chez l'autre espèce."

May not *Salt. Guyonii* LUC. (loc. cit., p. 156, Pl. 7, fig. 6) be the female to *A. Lucasii* SIM.? It seems to me not improbable, that *S. erraticus* LUC. is

p. 20 (10) is an entirely different species from *M. hamata* C. KOCH and the same as *M. radiata* (GRUBE): vid. supr., p. 368. — *Att. striatus* SUND., under which *Ar. striatus* CLERCK is taken up, and which WALCKENAER also includes under his *A. striatus*, is = *Marpessa muscosa* (CLERCK): vid. supr., p. 368. — Again another different species is *Euophrys striata* C. KOCH, in which KOCH supposed himself to have recognized CLERCK's *Ar. striatus*, but which ought to be called *Yllenus festivus* (C. KOCH), as has been shown in the preceding pages (p. 379) under *A. v-insignitus* WESTR. *Salt. striatus* LUC. <sup>1)</sup> is again another species different from all the preceding, and identical with *Hasarius Adansonii* (SAV. et AUD.), SIM. <sup>2)</sup>.

(Pag. 569.) 15. **A. sanguinolentus** [= *Philaeus chrysops* (Poda) 1761].

- Syn.*: 1761. ARANEA CHRYSOPS Poda, Ins. Mus. Græc., p. 123.  
 1763. " SLOANII Scop., Ent. Carn., p. 401.  
 1767. " SANGUINOLENTA LINN., Syst. Nat., Ed. 12, I, II, p. 1032.  
 1805. ATTUS SANGUINOLENTUS WALCK., Tabl. d. Aran., p. 24.  
 1806. SALTICUS SLOANII LATR., Gen. Crust. et Ins., I, p. 123.  
 1826. " SLOANI RISSO, Hist. Nat. d. princ. prod. de l'Eur. mérid., V, p. 174.  
 1829. ATTUS SLOANI HAHN, Monogr. Aran., 5, Pl. 3, fig. A.  
 1831. SALTICUS SANGUINOLENTUS ID., Die Arachn., I, p. 51, Tab. XIV, fig. 39.  
 1837. CALLIETHERA SANGUINOLENTA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 30.  
 1845. SALTICUS ERYTHROGASTER LUC., Explor. de l'Algér., p. 137, Pl. 5, fig. 3.  
 1845. " CIRTANUS ID., ibid., p. 142, Pl. 5, fig. 4.  
 1846. PHILIA SANGUINOLENTA C. KOCH, Die Arachn., XIII, p. 56, Tab. CCCCXLII, fig. 1124.  
 1846. DENDRYPHANTES DORSATUS ID., ibid., p. 84, Tab. CCCCXLVI, fig. 1147.  
 1846. " XANTHOMELAS ID., ibid., p. 85, Tab. CCCCXLVI, fig. 1148.  
 1846. " LEUCOMELAS ID., ibid., p. 88, Tab. CCCCXLVI, fig. 1150.  
 1868. ATTUS SANGUINOLENTUS SIM., Monogr. d. Attides, p. 26 (16) (*ad partem*: ♂).

the *male* of the same species, though it is stated to be a female, and though the palpi in the figure resemble those of a female. SIMON does not state whether he saw LUCAS' original specimens of the species in question.

1) Anim. artic. de l'île de Crète (Rev. et Magaz. de Zool., 1853), p. 21.

2) *Attus Adansonii* SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 404, Arachn., Pl. VII, fig. 8. — SIM., Révis. d. Attidæ, p. 330 (180).

1869. DENDRYPHANTES DORSATUS ID., *ibid.*, p. 638 (172).  
 1869. " NIGRICEPS ID., *ibid.*, p. 640 (174).  
 1870. PHILEUS SANGUINOLENTUS THOR., *On Eur. Spid.*, p. 217.  
 1872. ATTUS " SIM., *Révis. d. Attidæ*, p. 191 (67).

It is Dr L. KOCH of Nürnberg, to whom science is indebted for the interesting and startling discovery, that C. KOCH's *Dendryph. leucomelas* is the female to his *Philia sanguinolenta*. Dr KOCH communicated this his discovery to me as early as 1862, and described e. g. how he had found in one and the same nest "*Ph. sanguinolenta*" together with "*D. leucomelas*". Conf. SIM., *Révis. d. Attidæ*, p. 191 (67). — SIMON considers *D. xanthomelas* C. KOCH and *D. dorsatus* ID. as belonging to the same species as *D. leucomelas*, and in this he is probably right. (*Attus leucomelas* ROSSI<sup>1</sup>) is an entirely different species). The male of *D. dorsatus* SIM., described by SIMON, is a ♂ jun.: I myself possess a similar undeveloped male, the palpi of which present exactly the same appearance as the figure given by SIMON in his *Monogr. d. Attides* (Pl. 6 (II), fig. 13) of the palpi of his "*D. bivittatus* ♂", and which figure appears to be intended to show the peculiarities in the construction of the palpi, on which SIMON had founded the genus *Dendryphantes* (C. KOCH), SIM., which is by no means the same as *Dendryphantes* (C. KOCH), OHL. et THOR. Conf. THOR., *On Eur. Spid.*, p. 215. In his *Révis. d. Attidæ*, p. 134 (40), SIMON has reunited *Dendryphantes* SIM. with *Attus* SIM.

The male or "*Philia sanguinolenta*" varies considerably in size, colour of the legs etc.; south-European specimens have usually on the cephalothorax two longitudinal bands formed of white hair, though these are frequently wanting. Conf. SIM., *Révis. d. Attidæ*, p. 137 (13). The spider which SIMON in *Monogr. d. Att.* described as the female to his *A. sanguinolentus*, probably belongs to the to me unknown *Ph. hæmorrhoeica* C. KOCH. Vid. SIM., *Rév. d. Att.*, p. 191 (67). The male of this *Phileus hæmorrhoeicus* is said by SIMON to differ from his *A. sanguinolentus* by having a black belly and a shorter tarsal joint (lamina) of the palpi: in the last-named species this joint is at least three times as long as it is broad, and the belly is red. — *Philia setigera* DOLESCH.<sup>2</sup>) is perhaps not different from "*Ph. sanguinolenta*".

Having now had the opportunity of consulting PODA's scarce work, "*Insecta Musæi Græcensis*", printed at Gratz 1761, and having


1) Neue Arten v. Arachn., in HAIDINGER's Nat.-wissensch.-Abhandl., I, p. 6.

2) Syst. Verzeichn. etc., in Sitzungs-Berichte d. mathem.-natur-wissensch. Kl. d. kais. Akad. d. Wissensch., IX, p. 637 (26).

found that SCOPOLI was right in referring the ill and faultily but nevertheless quite recognizably described *Ar. chrysops* PODA to his *Ar. Sloani*, I consider myself bound to restore to the species its oldest nomen triviale, and to call it *Philæus chrysops* (PODA). — Whether this spider really belong to the Fauna of Scandinavia, is uncertain: it is however not improbable, as according to GRUBE (Verzeichn. d. Arachn., etc., in Arch. f. d. Nat.-Kunde Liv-, Ehst-u. Kurlands, 2 Ser., I, pp. 420 (6), 449 (35)), it is met with in the Russian Baltic provinces. LINNÆUS had received his *Ar. sanguinolenta* from Spain (vid. loc. cit.). My specimens are from Sicily, Northern Italy, Austria and Bavaria, the last (females) kindly provided by L. KOCH.

(Pag. 570.) 16. **A. arcuatus** [= *Attus arcuatus* (CLERCK) 1757].

- Syn.: 1757. ARANEUS ARCUATUS CLERCK, Sv. Spindl., p. 125, Pl. 6, tab. 1.  
 1763. ARANEA MARCGRAVII SCOP., Ent. Carn., p. 401.  
 1778. " GROSSIPES DE GEER, Mém., VII, p. 290, Pl. 17, figg. 11—14.  
 1781. " GÖZZENII SCHRANCK, Enum. Ins. Austr., p. 534.  
 1789. " FRONTALIS OLIV., Encycl. Méth., IV, p. 223.  
 1831. SALTICUS GROSSIPES HAHN, Die Arachn., I, p. 53, Tab. XIV, fig. 40.  
 1837. ATTUS GROSSIPES WALCK., H. N. d. Ins. Apt., I, p. 424.  
 1837. " ARCUATUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 33.  
 1848. EUOPHRYIS ARCUATA ID., Die Arachn., XIV, p. 30, Tab. CCCCLXXIII, fig. 1298.  
 1850. MATURNA " ID., Uebers. d. Arachn.-Syst., 5, p. 65.  
 1868. ATTUS ARCUATUS SIM., Monogr. d. Attides, p. 35 (25).  
 1868. " ALBO-CILIATUS ID., ibid., p. 36 (26).

SIMON himself now considers (Révis. d. Att., p. 143 (19)), that his *A. albo-ciliatus* is not specifically different from *A. arcuatus* SIM., and in this he is undoubtedly right: in Swedish specimens captured in the same locality, the colour of the eyes varies from a more or less pure green to a pale bronze-colour. — The female of this species appears to be considerably rarer than the male. The vulva seems to consist of a somewhat transversal, brown, horny area rounded in front (where it is not always distinctly defined): this area exhibits two pretty considerable, low protuberances, one on each side, sharply defined, especially posteriorly, by a -formed furrow extending across the area; its obliquely truncated posterior corners form one border of a narrow fovea or opening situated on both sides. The legs of the female are dark brown or black, *with all the tarsi*



*yellow*. In the male the tibial joint of the palpus is, at the apex of the external side, drawn out into a compressed, pointed process directed forwards and about the length of the joint; the bulbus is in front about as broad as it is long, narrowing backwards; its under-side, posteriorly, forms a coarse, downward-turned protuberance; the inner margin is slightly dilated in front. At the apex is a furrow, directed first obliquely inwards and afterwards backwards, which forms the boundary of a bright costa extending along the inner margin of the lamina.

(Pag. 571.) 17. **A. crucigerus** [= *Attus crucigerus* (WALCK.) 1825].

- Syn.*: 1825. *ATTUS CRUCIGERUS* WALCK., Faune Franç., Arachn., p. 59.  
 1831. *SALTICUS CRUX* HAHN, Die Arachn., I, p. 69, Tab. XVII, fig. 52.  
 1833. *ATTUS CRUCIFER* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. 1832, p. 215.  
 1833. " *RUFIFRONS* ID., ibid., p. 216 (= 3).  
 1837. *EUOPHRYS CRUCIFERA* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 33.  
 1846. " " ID., Die Arachn., XIII, p. 226, Tab. CCCCLXVIII, figg. 1270, 1271.  
 1848. " *QUINQUE-PARTITA* ID., ibid., XIV, p. 27 (*ad part.*: ♀), Tab. CCCCLXXIII, fig. 1297.  
 1850. *PALES CRUCIGERA* ID., Uebers. d. Arachn.-Syst., 5, p. 65.  
 1868. *ATTUS CRUCIGERUS* SIM., Monogr. d. Attides, p. 44 (34).

WALCKENAER erroneously takes up (Ins. Apt., I, p. 425) *A. rufifrons* SUND. under his *A. fuscus*, a spider, with which I am unacquainted. Conf. WESTR., Aran. Suec., p. 572, *Synon.* — *Salticus rufifrons* BLACKW. 1834 is, according to BLACKWALL himself (Spid. of Gr. Brit., I, p. 52) = *Euophrys frontalis* (WALCK.). LUCAS has described a third species under the name of *Salticus rufifrons* <sup>1)</sup>. — The spider described and figured by C. KOCH in Die Arachn. as the female to his *Euophr. quinque-partita*, by no means belongs to that species, but seems to me to be a variety of *A. crucigerus*. Vid. sup., p. 380, under *A. v-insignitus* WESTR.

(Pag. 573.) 18. **A. floricola** [= *Attus floricola* (C. KOCH) 1837].

- Syn.*: †1833. *ATTUS PUBESCENS* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. 1832, p. 206.  
 1837. *EUOPHRYS FLORICOLA* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 34.

1) Explor. d. l'Algérie, Anim. Artic., p. 152, Pl. 6, fig. 2.

1848. EUOPHRYS FLORICOLA C. KOCH, Die Arachn., XIV, p. 39, Tab. CCCCLXXIII, fig. 1301.  
 1850. PHÆBE FLORICOLA ID., Uebers. d. Arachn.-Syst., 5, p. 63.  
 1851. ATTUS SAXICOLA WESTR., Förteckn. etc., p. 55.  
 1867. EUOPHRYS PRATICOLA OHL., Aran. d. Prov. Preuss., p. 160.  
 1868. ATTUS FLORICOLA SIM., Monogr. d. Attides, p. 39 (29) (excl. "Var. rupicola").

As regards *Ar. pubescens* FABR., referred hither by WESTRING and SUNDEVALL, see above p. 381. *Ar. V notatus* CLERCK, which is also here taken up by SUNDEVALL, does not belong to this species, but to *A. v-insignitus*: vid. sup., p. 378. — OHLERT has himself sent me specimens of *A. floricola* under the name of *E. pratincola* OHL., which species is therefore erroneously referred by SIMON to *A. pratincola* (C. KOCH), SIM. — *Euophr. saxicola* C. KOCH<sup>1)</sup>, which WESTRING loc. cit. supposed to be the same as the species here in question, is not with certainty known to me: it is said by SIMON "widely to differ from the type *floricola*" (Révis. d. Attidæ, p. 149 (25)). — *Salticus floricola* BLACKW.<sup>2)</sup>, under which *E. floricola* C. KOCH is taken up, is an entirely different species, and = *A. saltator* SIM. (Monogr. d. Att., p. 611 (145)); see farther on under *Salt. floricola* BLACKW.

In *A. floricola* (C. KOCH) the vulva is formed of a rounded, somewhat transversal fovea, situated close to the rima genitalis, and bounded by two costæ curved towards each other, which are united behind, but appear to leave a small interval between their anterior somewhat knobbed or slightly retracted extremities. In the male the femoral joint of the palpi at its apex, as well as the patellar and tibial joints above, is for the greatest part covered with white hair, the lamina on the contrary is dark. — *Euophrys rupicola* C. KOCH 1848<sup>3)</sup> is certainly a different species from *A. floricola*. SIMON, who at first (loc. cit. in *Syn.*) considered it as a "constant variety" of *A.*

1) Die Arachn., XIV, p. 17, Tab. CCCCLXXI, figg. 1284, 1285.

2) Spid. of Gr. Brit., I, p. 55, Pl. III, fig. 30.

3) Die Arachn., XIV, p. 19, Tab. CCCCLXXI, fig. 1286. — HENTZ has in 1846 described another species under the name of *A. rupicola* (Descr. and fig. of the Aran. of the U. S., in Bost. Journ. of Nat. Hist., V, p. 357, Pl. XXI, fig. 14). There is however as yet no reason to give *A. rupicola* (C. KOCH) a new name, for if HENTZ' *A. rupicola*, as is probable, do not belong to the genus *Attus* sens. strict., both species ought to retain the specific name *rupicola*. To reject a specific name, as SIMON sometimes does, merely because it has been previously given to another species of the same family, is quite contrary to the received custom in Zoology and Botany, which only prohibits two species within the same genus having the same specific name.

*floricola*, has since (Révis. d. Attidæ, p. 147 (23)) restored it to its rank as an independent species. A ♂, which I received from Dr L. Коч, appears to me to differ from *A. floricola* ♂ in having, among other peculiarities, the tibial joint of the palpus for the most part covered with dark (black and reddish brown) hair, and only the femoral joint towards the apex and the patellar joint above white-haired, as also in having the first pair of legs at the utmost only equal in length to, not longer than, the 4<sup>th</sup>: their patella + tibia are only = patella + tibia + half metatarsus of the 4<sup>th</sup> pair, whereas in *A. floricola* ♂ the 1<sup>st</sup> pair's patella + tibia is about as long as the 4<sup>th</sup> pair's patella, tibia and whole metatarsus together <sup>1</sup>).

1) I have received from Prof. WAHLGREN an *Attus* found at Ringsjön in Skåne, which so closely resembles *A. floricola* ♂, that I can only distinguish it by its having the fore-legs considerably shorter than in the last-mentioned species, scarcely as long as the 4<sup>th</sup> pair, and their patella + tibia considerably shorter than the cephalothorax, not, as in *A. floricola* ♂, of equal length with it. The animal is also smaller than the specimens of *A. floricola* ♂ usually met with, and the process on the tibial joint perhaps a little longer. It is certainly possible that *A. floricola* ♂ may vary in this manner, and that a sort of dimorphism with respect to the length of the anterior pair of legs may occasionally take place in male spiders, similar to the dimorphism which undoubtedly exists with respect, for example, to the length of the mandibles in certain species, as *Linyphia triangularis* (CLERCK), WESTR. But it is most probable that this short-legged form constitutes an independent species, and it may therefore here be provided with a name and description.

*Attus mancus* N. — Mas ad. — Simillimus *A. floricolæ* ♂, et vix nisi pedibus anterioribus brevioribus distinctus: long. corporis c:a 3<sup>3</sup>/<sub>4</sub>, cephalothoracis 2, pedum 1:mi et 4:ti paris 4 millim., patella cum tibia 1:mi paris æque longa ac 4:ti, 1<sup>1</sup>/<sub>2</sub> millim., ideoque cephalothorace multo brevior; pedes 1:mi paris non longiores, potius paullo breviores quam pedes 4:ti paris. Apex lateris exterioris partis tibialis palporum in procursum acutum productus est, qui, quum a latere aspicitur palpus, paullo longior esse videtur quam ipsa pars tarsalis.

*Cephalothorax* niger, linea media tenui albidâ margineque anguste albidō; a linea media, pone oculos posticos, abeunt utrinque lineæ duæ paullo divaricantes, foras et retro directæ, ex pilis albis et rufescentibus formatæ. Mox sub oculis posticis linea alba sub-sinuata utrinque secundum partem cephalicam sese extendit, quæ lineæ fere parallele sunt: inter eas et lineam marginalem primum rufescenti-, tum (infra) albicanti-pilosa sunt latera partis cephalicæ; area quadranguli oculorum rufescenti-pilosa. Linea albidâ supra et infra oculos medios anticos adest, clypei summus margo quoque albidō-pubescenti; oculi illi præterea annulo angusto pilorum, in lateribus rufescentium, supra et infra albidorum, circumdati. *Palpi* nigri, supra — lamina nigro-pilosa excepta — albidō-pilosi, parte patellari extus rufescenti-pilosa. *Pedes* nigricantes, maculis ex pilis albis formati, in patellis et tibiis minus distincte clarius annulati, metarsis tarsisque sub-testa-

(Pag. 576.) 19. **A. caricis** [= *Attus caricis* WESTR. 1861].

*Syn.*: 1869. *ATTUS RIPARIUS* SIM., Monogr. d. Attides, p. 43 (33).

1872. „ *ATELLANUS* ID., Révis. d. Attidæ, p. 150 (26).

A specimen of this species, which I sent to SIMON, has been by him recognized as his *A. riparius* or *atellanus*. (*Euophrys atellana* C. KOCH'), cited as identical by SIMON, is probably a different species from *A. caricis* WESTR., with which neither KOCH's figure nor his description agrees. Thus for example we see from both, that *E. atellana* ♀ has *black palpi and black legs with yellow metatarsi and tarsi*, whereas in *A. caricis* ♀ palpi and legs are *yellowish brown or rust-coloured*, and the legs have *dark rings*.

In *A. caricis* the femoral joints of the male's palpi are white-haired above; the succeeding joints (the lamina at least at its base) are covered above with short, close, reddish hair or scales. The tibial joint, at its apex, on the outer side, is drawn out into a somewhat narrow, pointed process, which is at least as long as the joint itself and lies close to the margin of the lamina.

(Pag. 578.) 20. **A. falcatus** [= *Attus falcatus* (CLERCK) 1757].

*Syn.*: 1757. *ARANEUS FALCATUS* CLERCK, Sv. Spindl., p. 125, Pl. 5, tab. 19.

1757. „ *FLAMMATUS* ID., ibid., p. 124, Pl. 5, tab. 18.

?1758. *ARANEA RUPESTRIS* LINN., Syst. Nat., Ed. 10, I, p. 623.

1763. „ *BLANCARDI* SCOP., Ent. Carn., p. 402.

1789. „ *FALCATA* OLIV., Encycl. Méth., IV, p. 222.

1789. „ *FLAMMATA* ID., ibid.

1802. „ *CORONATA* WALCK., Faune Par., II, p. 245.

1805. *ATTUS CORONATUS* ID., Tabl. d. Aran., p. 24.

1825. „ „ ID., Faune Franç., Arachn., p. 48.

1825. „ *CAPREOLUS* ID., ibid., p. 23<sup>2</sup>).

ceis, nigro-annulatis. *Abdomen* nigrum, dorso basi linea albicanti arcuata cincto; maculis duabus albis sub-transversis in medio fere dorso, punctisque duobus parvis ante eas, cum iis trapezium postice multo latius formantibus; in lateribus dorsi, versus mamillas, maculæ fere trinæ albæ conspiciuntur. Præterea pilis rufescentibus conspersum est abdomen, præsertim ante puncta illa albida, ubi tales pili fascias duas obliquas fere formant, et postice, inter maculas quas utrinque versus mamillas adesse diximus.

Specimen unicum masculum, in Scania ad Ringsjön inventum et a Cel. Prof. F. WAHLGREN dono mihi datum, vidi.

1) Die Arachn., XIV, p. 41, Tab. CCCCLXXIV, fig. 1302.

2) Not to be confounded with *A. capreolus* L. KOCH (Z. Arachn.- u. Myriap.-Fauna Süd-Eur., in Verhandl. d. zool.-bot. Ges. in Wien, XVII (1867), p. 872 (16).


- ?182.. *ATTUS LIMBATUS* HAHN, Monogr. Aran., 4, Pl. 1, fig. C.  
 1831. *SALTICUS ABIETIS* ID., Die Arachn., I, p. 61, Tab. XVI, fig. 46.  
 1831. " *BLANCARDII* ID., ibid., p. 64, Tab. XVI, fig. 48.  
 1833. *ATTUS FALCATUS* SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl.  
 1832, p. 213.  
 1837. *EUOPHRYS FALCATA* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 33.  
 1848. " " ID., Die Arachn., XIV, p. 24, Tab. CCCCLXXII,  
 figg. 1290—1295.  
 1861. *SALTICUS CORONATUS* BLACKW., Spid. of Gr. Brit., I, p. 50, Pl.  
 III, fig. 26.  
 1868. *ATTUS FALCATUS* SIM., Monogr. d. Attides, p. 54 (44).

Concerning *Ar. corollata* LINN., which WALCKENAER takes up under his *A. coronatus*, see above, p. 93; concerning *Ar. rupestris*, erroneously referred by WALCKENAER to "*A. pubescens*", vid. Rec. crit. Aran., p. 91. In his H. N. d. Ins. Apt., IV (p. 411), WALCKENAER aggregates to *A. coronatus* a number of species described by C. KOCH, the only one of which that really belongs to that species is *E. falcata*, and supposes some of KOCH's figures of *E. falcata* to represent *A. nidicolens* WALCK. (vid. supr., p. 380), which is certainly a mistake. As regards *Salt. agilis* HAHN, aggregated by C. KOCH (Uebers. d. Arachn.-Syst., 5, p. 62) to this species, see the next following, *A. tigrinus* WESTR. *A. limbatus* HAHN, which WALCKENAER considers as a separate species, and which SIMON supposes to be perhaps identical with the to me unknown *A. crassipes* SIM. <sup>1)</sup>, seems to me to be only a variety of *A. falcatus*. Conf. p. 364, the foot-note.

The tibial joint of the palpus in the male of *A. falcatus* is at its extremity, on the outer side, drawn out into a long, almost straight process directed forwards and truncated at the extremity; the bulbus on the under side, posteriorly, is swelled into two protuberances, so that, when seen in profile, it there exhibits a transversal depression; the vulva appears to be exactly similar to that of *A. arcuatus* ♀ (see above, p. 390). The male of the very closely allied, but generally smaller, *A. (Euophr.) lætabundus* (C. KOCH)<sup>2)</sup> — which must not be confounded with *A. lætabundus* WESTR., of which more hereafter — has the process of the tibial joint shorter and more directed outwards, and somewhat emarginated at the apex, as also the bulbus but slightly swelled posteriorly and destitute of protuberances and depression.

1) Monogr. d. Attides, p. 575 (109).

2) Die Arachn., XIV, p. 21, Tab. CCCCLXXI, figg. 1287—1289.

At Sättra in Westmanland I have met with a female specimen (much injured), with legs of a uniform yellowish colour. of *A. farinosus* (C. KOCH), SIM. 1), which is very closely allied to *A. falcatus*, but is nevertheless evidently a separate species: even its vulva is somewhat different from that of *A. falcatus*, for it is composed merely of a transversal, brown, horny area, bordered in front by a -shaped furrow, and notched at the posterior margin. This area then corresponds only to the posterior part of the vulva in *A. falcatus*, for the low, brown protuberances in front of the transversal furrow in *A. falcatus* are here absent, whereas in *A. falcatus* the notch in the posterior margin of the vulva is wanting. SIMON, to whom I sent this specimen, has confirmed the correctness of the name which I had given it. A couple of females, the vulvæ of which perfectly agree with the above-described, I have received from Austria of Mr v. KEMPELEN: in the design formed by the distribution of the colours of the abdomen they closely resemble KOCH's figure (loc. cit.) of his *Euophrys farinosa*. The male of *A. farinosus*, according to SIMON, differs from *A. falcatus* ♂ by the bulbus "appearing to be more globular and more rounded at the base: its upper and exterior (supéro-externe) apex is armed with a little divergent tooth".

(Pag. 580.) 21. *A. tigrinus* [= *Attus erraticus* WALCK. 1825].

- Syn.*: 1825. *ATTUS ERRATICUS* WALCK., Faune Franç., Arachn., p. 46.  
 ?1831. *SALTICUS AGILIS* HAHN, Die Arachn., I, p. 72, Tab. XVIII, fig. 54.  
 ?1831. " *GRACILIS* ID., ibid., p. 73, Tab. XVIII, fig. 55.  
 1837. *EUOPHRYS TIGRINA* C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 33.  
 1841. *SALTICUS DISTINCTUS* BLACKW., The differ. in numb. of eyes, *cet.*, in Transact. of the Linn. Soc., XVIII, p. 616.  
 1848. *EUOPHRYS TIGRINA* C. KOCH, Die Arachn., XIV, p. 6, Tab. CCCCLXIX, figg. 1275—1277.  
 1850. *INO TIGRINA* ID., Uebers. d. Arachn.-Syst., 5, p. 63.  
 1851. *ATTUS TIGRINUS* WESTR., Förteckn., *cet.*, p. 56.  
 1861. *SALTICUS DISTINCTUS* BLACKW., Spid. of Gr. Brit., I, p. 54, Pl. III, fig. 29.  
 1869. *ATTUS ERRATICUS* SIM., Monogr. d. Attides, p. 588 (122).

The synonyms of this species are difficult and in part perhaps impossible to determine with certainty. *Salt. distinctus* BLACKW., *Euophrys tigrina* C. KOCH and *Attus erraticus* SIM., are however per-

1) C. KOCH, Die Arachn., XIII, p. 223, Tab. CCCCLXVIII, fig. 1268; SIMON, Monogr. d. Attides, p. 59 (49); ID., Rév. d. Attidæ, p. 144 (20).

fectly certain synonyms to it. WESTRING cites, though with an interrogation, *Salt. gracilis* HAHN and *S. agilis* ID., and it seems to me probable that he is right in this; also C. KOCH (Die Arachn., XIV, p. 9) is inclined to consider *S. gracilis* as synonymous with his *E. tigrina*. BLACKWALL has however described another and to me unknown species under the name of *S. gracilis* HAHN (Spid. of Gr. Brit., I, p. 56), and also WALCKENAER has an *A. gracilis* (Ins. Apt., I, p. 423), under which he classes *S. gracilis* HAHN. SIMON thinks (Monogr. d. Attides. p. 611 (145)) that this spider of HAHN's may perhaps be identical with *A. saltator* SIM. or *S. floricola* BLACKW. (on which see farther on), but this appears to me very improbable. — As regards *S. agilis* HAHN, SIMON has indeed, loc. cit., p. 539 (73), described a separate species under the name of *A. agilis* (HAHN), but in his Révis. d. Attidæ, p. 159 (35) he again expresses his doubts as to whether that spider be really the same as HAHN's *S. agilis*. WALCKENAER<sup>1)</sup> registers *S. agilis* HAHN under his *A. callidus* 1802, which again is placed by SIMON among the synonyms of *A. erraticus* SIM. This however can hardly be correct: the legs of *A. callidus* are said to be "of a pale reddish colour, like the mandibles", without any dark rings being mentioned; the 3rd pair is stated to be longer than the 4th etc. Conf. Faune Franç., Arachn., p. 55. — C. KOCH takes up as synonyms under his *E. tigrina*: *S. tigrinus* HAHN = *A. tigrinus* WALCK. — also cited by WESTRING, though with an interrogation —, *S. littoralis* HAHN and *A. virgulatus* WALCK.; but neither of these appears to me to belong to the species before us. That *A. erraticus* WALCK. is identical with *A. tigrinus* (C. KOCH), WESTR., or *S. distinctus* BLACKW., follows beyond doubt from the detailed description in the Faune Franç., loc. cit. When BLACKWALL denies this, he appears under the name of *A. erraticus* to mean a different species from that which I, as well as SIMON, consider to be the true *A. erraticus*. SIMON has himself obliged me with specimens of *A. erraticus* SIM. from the neighbourhood of Paris.

*Salticus erraticus* LUC. (Explor. de l'Algérie, Anim. Artic., p. 149, Pl. 6, fig. 5) is quite a different species, and = *A. Lucasii* SIM. (Monogr. d. Attides, p. 568 (102)), which again, according to SIMON (Révis. d. Attidæ, p. 183 (59)), is identical with *Icelus* (*Marpessa*) *notabilis* C. KOCH. Vid. supr., p. 387.

1) In H. N. d. Ins. Apt., II, p. 464, WALCKENAER has described under the name of *A. agilis* a spider, which appears to be identical with *Menemerus semilimbatus* (HAHN) or *Euophr. vigorata* C. KOCH.

(Pag. 583.) 22. *A. cinereus* [= *Attus cinereus* WESTR. 1861].

*Sym.*: ?1833. *ATTUS PUBESCENS* Var.  $\beta$  SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. 1832, p. 207.

1872. „ *HELVEOLUS* SIM., Révis. de Attidæ, p. 164 (40) (*saltem* ♂).

As WALCKENAER had already in 1837, in his H. N. d. Ins. Apt., applied the name *cinereus* to another Attoid, SIMON loc. cit. has given WESTRING'S *A. cinereus* a new denomination, *A. helveolus*; but WALCKENAER'S *A. cinereus* probably does not belong to the genus *Attus* sensu strict., and it would therefore be best to allow WESTRING'S spider to retain for the present its original name. Vid. sup., p. 392, note.

Prof. STÅL has lately favoured me with a (dried) specimen of the female of *A. cinereus* WESTR., which sex was unknown to WESTRING; the specimen was captured in West-Bothnia by the late Prof. BOHEMAN. In this female the cephalothorax on the sides and the posterior declivity is covered with greyish white hair: the remaining parts are covered with pale greyish red hair, mixed with greyish white, and is moreover besprinkled with longer, black hairs; the greyish white hair also forms some small spots, of which one of an oblong form situated in the midst of the posterior part of the eye-quadrangle seems the most conspicuous. The clypeus is covered with greyish white hair, mixed with some reddish hairs at the sides, downwards; the hair-rings of the anterior centre eyes are reddish above, greyish white below. The legs are greyish yellow, thickly clad with greyish white hair, and marked with tolerably dark rings and spots: the thighs are dark at the apex, as are also the tibiæ, though but slightly, and the other joints also show signs of dark rings or spots. The back of the abdomen is thickly covered with pale greyish red hair sparingly mixed with greyish white: the greyish white hair forms four rounded spots, nearly forming a square in the midst of the back; in the anterior margin of each spot is a little depressed black point. On the sides and underneath the abdomen is greyish white. — The females reckoned by SIMON to this species, and which have legs and palpi "entièrement d'un blanc testacé, sans aucun anneau", are from the south of France; the only hitherto found male specimen, which has served as type both for WESTRING'S and SIMON'S description, was caught at Halmstad in Haland by Dr F. E. VON SYDOW, and is preserved in my collection.

In the male the patellar joint of the palpi, as also the femoral joint at its apex, is thickly covered above with white hairs; the tibial joint on the contrary is white-haired only on the outer side:



on the inner side it is, like the lamina, black, bestrewed with a few reddish hairs. The bulbus is black. When the palpi are examined from below, it appears that the tibial joint has at its apex on the outer side a sharp tooth pointing forwards. —

A species that has not been described by Swedish arachnologists, but of which two male specimens have been taken here in the vicinity of Upsala, the one by myself, the other by Mr EISEN, is *Attus miser* SIM., Monogr. d. Attides, p. 608 (142). Conf. SIMON, Révis. d. Attidæ, p. 171 (47).

(Pag. 584.) 23. *A. cupreus* [= *Heliophanus cupreus* (WALCK.) 1802].

*Syn.*: ?1763. ARANEA RITTEI SCOP., Ent. Carn., p. 402.

1802. " CUPREA WALCK., Faune Par., II, p. 245 (*salt. ad part.*).

?1803. " AENE SCHRANCK, Fauna Boica, III, I, p. 238.

1805. ATTUS CUPREUS WALCK., Tabl. d. Aran., p. 24 (*salt. ad part.*).

1833. HELIOPHANES CUPREUS C. KOCH, in HERR-SCHLEFF., Deutschl. Ins., 119, 1, 2 (*sec. Krit. Rev. d. Ins.-Fauna Deutschl., III*)<sup>1</sup>).

1833. ATTUS ATROVIRENS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. f. 1832, p. 210 (*salt. ad part.*).

?1834. SALTICUS CHALYBEIUS HAHN, Die Arachn., II, p. 42, Tab. LV, fig. 127.

?1834. " CUPREUS ID., *ibid.*, p. 42, Tab. LV, fig. 128.

1835. HELIOPHANES FLAVIPES C. KOCH, in HERR-SCHLEFF., Deutschl. Ins., 131, 3, 4 (*sec. Die Arachn.*).

?1837. HELIOPHANUS CHALIBEUS ID., Uebers. d. Arachn.-Syst., 1, p. 30.

?1837. " MICANS ID., *ibid.*

1848. " CUPREUS ID., Die Arachn., XIV, p. 56, Tab. CCCCLXXVI, figg. 1313—1315.

?1848. " METALLICUS ID., *ibid.*, p. 60, Tab. CCCCLXXVI, fig. 1316.

?1848. " MICANS ID., *ibid.*, p. 68, Tab. CCCCLXXVII, fig. 1324.

1861. SALTICUS CUPREUS BLACKW., Spid. of Gr. Brit., I, p. 57, Pl. III, fig. 31 (*ad part.*).

1869. HELIOPHANUS CUPREUS SIM., Monogr. d. Attides, p. 669 (203).

*Ar. Ritteri* SCOP. is by no means so sure a synonym as to justify the taking up of that trivial name for the species before us. — WALCKENAE'S *A. cupreus* and SUNDEVALL'S *A. atrovirens* probably include both *H. cupreus* and *H. flavipes*, as is also the case with BLACKWALL'S *Salticus cupreus* (see next species). — *S. aeneus* HAHN, adduced as synonymous by WALCKENAE, appears to me identical not with this spe-

<sup>1</sup>) In Die Arachniden, XIV, p. 57, *Syn.*, the species represented by these figures is called *H. flavipes*.

cies, but with *H. muscorum* (WALCK.). — *A. cupreus* SAV. et AUD.<sup>1)</sup> is, according to SIMON (loc. cit., p. 671 (205)), a species perfectly different from the European *H. cupreus*; and *A. Mouffetii* SAV. et AUD.<sup>2)</sup>, adduced by WALCKENAER, is without doubt also a different species.

Whether all the European *Heliophani* described by SIMON in his Monogr. d. Attides and Révis. d. Attidæ — they are not less than 41 in number — be really good species, is a question which future times will have to determine. Of C. KOCH's species SIMON has not only taken up *H. truncorum* (*muscorum*), *cupreus*, *dubius* (which is said be identical with *H. Karpinski* SIM.), *auratus* (= *H. Brannickii* SIM.) and *flavipes*, of which both sexes are described, but he registers as separate species also *H. nitens* C. KOCH, *H. tricinatus* ID. (the figure of which in KOCH's work appears to me strikingly similar to the "*S. cupreus*" figured by HAHN, loc. cit.) and others, of which he was only acquainted with the female. *H. metallicus* C. KOCH and *H. micans* ID. are by SIMON passed over in silence: they are probably only varieties of *H. cupreus*. Neither does SIMON mention *H. auro-cinctus* OHL. (Arachn. Stud., p. 11). Many of SIMON's species appear to me rather uncertain; but possibly others may be more successful than I have been in endeavouring from his work to discover their distinctive characters. It might possibly have been not without utility to have examined whether the form of the vulva and the spine-armature of the legs might not in some measure contribute to the characterization of the species. It is certain that *H. cupreus*, for example, varies vastly as regards colour — much more than what SIMON appears to have remarked; the young especially are often very unlike the full-grown, and ornamented with brighter colours. A remarkable variety of the female, with almost uniformly black legs and *black palpi*, is mentioned by WESTRING ("Var. C" WESTR.), and I have such-like specimens in my collection. *S. chalybeius* HAHN seems to me to represent such a variety.

Numerous as the species of *Heliophanus* are in the south of Europe, the representatives of this genus are proportionately rare in the North. All the fully developed Swedish males that I have seen, belong to two species only, *H. cupreus* and *H. flavipes*: I have not with certainty observed a third species in this country. *H. muscorum* (WALCK.)

1) Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, Arachn., p. 407, Pl. VII, fig. 15.

2) Ibid., p. 407, Pl. VII, fig. 16.

1825, common in many parts of Germany, and to which C. KOCH, and after him SIMON, have given quite erroneously the Linnæan name *truncorum*, has never as yet been found in Sweden, unless the female specimen of *A. atrovirens* "solito major, long. thoracis  $2\frac{1}{2}$  millim.", which SUNDEVALL once found in Skåne (see loc. cit., p. 211), possibly may have been a *H. muscorum* ♀. — Of *H. cupreus* SIM. I have a ♂ and a ♀ ad. from Paris, with which SIMON himself obligingly favoured me; I have also specimens of both sexes of *H. flavipes*, which this author has identified as *H. flavipes* SIM.

In *H. cupreus* ♂ the femoral joint of the palpus is at about the middle of the inner side strongly and broadly depressed, and here, on the under side, drawn out into a coarse, compressed, downward- and slightly outward-pointing tooth, the *single* apex of which is curved backward and inward. The patellar joint, viewed from above, is at least as long as it is broad, the tibial joint is more than double as short as, and somewhat narrower than, the patellar joint, and twice as broad as it is long; it has on the outer side a fine, pretty long, slightly ~-curved spine directed outwards and somewhat downwards and forwards; at the extremity of the under side, outwards, the tibial joint further-more exhibits a fine process or spine, which at the apex is somewhat bent backwards. The lamina is considerably longer than the two joints just mentioned put together, about  $2\frac{1}{2}$  times as long as it is broad at the base, regularly and gently tapering towards the rounded extremity. The bulbus, which is considerably shorter than the lamina, is irregularly triangular, with the angles rounded off, and convex on the under side; with the inmost of these angles, which is very turgid, it reaches far beyond the inner side of the lamina, which therefore does not cover this part of the bulbus. Near the angle which forms its apex, the bulbus is armed with a tolerably long, somewhat spirally curved spine; behind, at the upper part of the base, it exhibits a short tooth pointing backwards. — In the females of this species I have observed a very remarkable peculiarity. In most of the female specimens taken in company with males, the palpi of which I have now described, the area near the rima genitalis, which the vulva ought to occupy, is covered with a hard, brown or red, shining substance, forming one, or more frequently two, very considerable, differently sized protuberances, one of which is frequently extended so as to form a back-turned, conical or cylindrical process (as is the case for example in the ♀ from Paris, which I received from SIMON).

The varying and in general irregular form of these protuberances seems to me to justify the assumption, that they are composed of matter sweated out of or secreted from the vulva; in one specimen, in which I managed to separate them, there appeared beneath, close to the rima genitalis, a rather small but deep fovea, broader behind and slightly notched in the posterior margin. In other specimens, in which the above-mentioned single or double protuberance is absent, the vulva has the form of two rounded foveæ close to the rima genitalis, separated by a more or less )( -shaped septum or interval, much as in *H. muscorum* ♀.

The male of *H. flavipes* is easily distinguished from *H. cupreus* by having the tooth on the femoral joint of the palpus *bifid* at the apex, its posterior prong being considerably smaller than the other; the spine on the outer side of the tibial joint is shorter, curved downwards, and almost — -shaped; the lamina, broader at the base, is of uniform breadth from about the middle to the rounded extremity; the tooth on the posterior part of the bulbus is curved downwards. The female's cephalothorax is without the deep transverse depression behind the hindermost row of eyes, which we observe in *H. cupreus* ♀; the hairy clothing is destitute of metallic brightness. In all the specimens of this species that I have seen, the vulva is composed of two distinct, rounded or somewhat oblong, shallow foveæ close to the rima genitalis.

(Pag. 585.) 24. **A. flavipes** [= *Heliophanus flavipes* (Hahn) 1831].

- Syn.*: 1831. SALTICUS FLAVIPES HAHN, Die Arachn., I, p. 66, Tab. XVII, fig. 50.  
 1837. HELIOPHANUS FLAVIPES C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 30.  
 1848. " " ID., Die Arachn., XIV, p. 64, Tab. CCCCLXXVII, figg. 1320—1322.  
 1861. SALTICUS CUPREUS BLACKW., Spid. of Gr. Brit., I, p. 57, Pl. III, fig. 31 (*ad part.*).  
 1869. HELIOPHANUS FLAVIPES SIM., Monogr. d. Attides, p. 681 (215).

Vid. preced. spec., *Attus cupreus* WESTR. — That *H. flavipes* is included under BLACKWALL'S *Salt. cupreus*, is evident from his description of the male's palpi, where it is stated that their femoral joint "has a very large *bifid* protuberance on the under side" etc.

(Pag. 586.) 24. *A. lætabundus* [= *Euophrys pæcilopus* N.].

*Syn.*: 1851. *ATTUS LÆTABUNDUS* WESTR., Förteckn., *cet.*, p. 56.

Of this species I have seen but one specimen, a dried ♀ *jun.*, the same that served as type for WESTRING's description. *Euophrys lætabunda* C. KOCH, adduced as identical by WESTRING, is a species widely different and closely allied to *A. falcatus*: vid. *supr.*, p. 395. SIMON takes up *A. lætabundus* WESTR. under his *A. Westringii* (*Monogr. d. Attides*, p. 605 (139)), but this can hardly be correct: the comparison between SIMON's description and the species before us indicates several important differences, amongst others that whereas *A. Westringii* ♀ has according to SIMON its legs and palpi "entièrement d'un jaune diaphane", the palpi and legs of *A. lætabundus* WESTR. are greyish white, the palpi at the base black and the legs black-ringed and -spotted, the patella and tibia of the 1st pair blackish, with two lighter lines above, and the thighs of that pair also towards the apex for the most part blackish; the face is entirely destitute of white hair, with which in *A. Westringii* it is said to be covered. I have therefore assigned to WESTRING's *A. lætabundus* a new name, and call it *Euophrys pæcilopus*.

In *E. pæcilopus* the head is slightly narrowing forwards, so that the eye-quadrangle is somewhat broader behind than before; and the species thus approaches the genus *Ballus*. The distance between the two hindmost eyes appears however to be but little greater than that between them and the margin of the cephalothorax, as is the case in *Euophrys* as distinguished from *Ballus* (vid. THOR., *On Eur. Spid.*, p. 207). The hindmost eyes are situated far in front of the middle of the cephalothorax. The eyes of the intermediate row are posited midway between the lateral eyes of the first row and the hindmost eyes. A line touching the upper border of the anterior eyes would be but slightly curved backwards. The patellæ of the 1st pair of legs, viewed from above, are fully as long as the tibiæ, which are double as long as they are broad, without any conspicuous spines; the metatarsi, which are almost half as long again as they are broad, have two spines on each side, below, which are little or nothing longer than the diameter of the joint.

- (Pag. 587.) 26. *A. frontalis* [= *Euophrys reticulata* (BLACKW.) 1853]  
+ *Euophrys frontalis* (WALCK.) 1802].

"Femina" (*Euophrys reticulata*):

- Syn.: 1853. SALTICUS RETICULATUS BLACKW., Descri. of some newly disc. spec.,  
cet., in Ann. and Mag. of Nat. Hist., 2 Ser.,  
XI, p. 14.  
1861. " " ID., Spid. of Gr. Brit., I, p. 60, Pl. III, fig. 33.  
1869. ATTUS " SIM., Monogr. d. Attides, p. 604 (138).

"Mas" (*Euophrys frontalis*):

- Syn.: 1802. ARANEA FRONTALIS WALCK., Faune Par., II, p. 246.  
1805. ATTUS " ID., Tabl. d. Aran., p. 24.  
1834. EUOPHRYS FRONTALIS C. KOCH, in HERR-SCHIEFF., Deutschl. Ins.,  
123, 7, 8 (sec. Die Arachn.).  
1834. SALTICUS MACULATUS REUSS, Zool. Misc., in Mus. Senckenb., I, p.  
271 (278), Pl. XVIII, fig. 10.  
1834. " RUFIFRONS BLACKW., Researches in Zool., p. 420 (sec.  
Spid. of Gr. Brit.).  
1848. ATTUS FRONTALIS C. KOCH, Die Arachn., XIV, p. 44, Tab.  
CCCCLXXIV, figg. 1304, 1305.  
1861. " STRIOLATUS WESTR., Aran. Succ., p. 591 (= ♀).  
1861. SALTICUS FRONTALIS BLACKW., Spid. of Gr. Brit., I, p. 52, Pl.  
III, fig. 27.  
1869. ATTUS FRONTALIS SIM., Monogr. d. Attides, p. 597 (131).

WESTRING has under the name of *A. frontalis* united the male of the real *A. frontalis* WALCK. (the female of which he describes under the name of *A. striolatus*) with the female of *Salt. reticulatus* BLACKW. Of this last species I have a ♂ *ad.* from England, with which I have been kindly favoured by CAMBRIDGE; I have myself often found specimens of it in the neighbourhood of Göteborg, and on one occasion a ♂ *ad.* It has also been met with in Upland and in Gotland. A specimen which I sent to SIMON has by him been identified as *A. reticulatus* SIM. Of *A. striolatus* WESTR. or the real *E. frontalis*, I have collected numerous specimens at Pymont in Germany, and I have also found it in Berner Oberland and at several places in Sweden. The male of *E. reticulata*, which WESTRING had never seen, resembles the female very closely both in form and colour: the hindermost eyes are situated almost in the middle of the cephalothorax, and the posterior tibiæ and metatarsi are without spines, as in the female, whereas the contrary is the case in *E. frontalis*, both ♂ and ♀. The tibiæ of the first pair have on the under side three very

long, appressed spines, as in the female; the anterior eyes are encircled by a very narrow ring of *whitish* hair (not *reddish*, as in *E. frontalis* ♂); the palpi are destitute of the white hairy covering which distinguishes the palpi of *E. frontalis* ♂, etc. — In *E. reticulata* the colour is subject to considerable variation, sometimes being paler and sometimes darker.

*A. striolatus* C. KOCH<sup>1)</sup> seems to be a different species from *E. frontalis*. — *Salticus promptus* BLACKW.<sup>2)</sup>, which SIMON at first (Monogr. d. Attides, p. 598 (132)) considered as a young *E. frontalis*, is a separate species. Vid. SIMON, Révis. d. Attidæ, p. 213 (89).

(Pag. 590.) 27. *A. heterophthalmus* [= *Ballus ænescens* (SIM.) 1869].

Syn.: 1869. ATTUS ÆNESENS SIM., Monogr. d. Attides, p. 628 (162).

Concerning this species, vid. supr., p. 373, under *A. brevipes* WESTR. — Prof. STÅL has lately obliged me with several dried specimens of both sexes of this spider captured in Småland, East-Gothland and the isle of Gotland by the late Professor BOHEMAN. In most of the specimens the gold-shining scales on the abdomen are conspicuous, especially in the midst of the abdomen, where they form a transversal band broken in the middle. In the males similar scales are sometimes met with also on the cephalothorax, partly just above the first row of eyes, partly forming, on each side of the pars cephalica, a longitudinal band which reaches somewhat beyond the hindermost eyes. The colour of the tibiæ of the 1st pair varies from entirely black to more or less broadly black at the apex.

(Pag. 591.) 28. *A. striolatus* [= *Euophrys frontalis* (WALCK.) 1802].

Vid. preceding page, *A. frontalis* WESTR.

(Pag. 592.) 29. \**A. niger* [= *Epiblemum*(?) *inc. spec.*].

Syn.: 1833. ATTUS NIGER SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. 1832, p. 204.

The type-specimens (two males) of this spider, which WESTRING had not himself seen, and which has never again been found since

1) Die Arachn., XIV, p. 47, Tab. CCCCLXXIV, fig. 1306.

2) Spid. of Gr. Brit., I, p. 59, Pl. III, fig. 32.

its discovery by SUNDEVALL, have probably been lost. It follows however immediately from SUNDEVALL's description, that the species cannot be identical with *A. niger* WALCK., which he adduces, and which, judging at least from a female kindly sent me by SIMON under the name of *A. niger* WALCK., belongs to the genus *Attus* sensu strict. SUNDEVALL's *A. niger* on the contrary is stated to be "magnitudine et statura sat affinis *A. scenico* vel adhuc debilior", and accordingly most probably belongs to the genus *Epiblemum* (*Calliethera*); the male's mandibles are however said to be "breves, ungue parvo". I dare not offer any further conjecture on this very doubtful species.

As regards *A. niger* WALCK., see above, p. 384. — HENTZ has also described an Attoid under the name of *Attus niger*<sup>1)</sup>.

(Pag. 592.) 30. ***A. lapponicus*** [= *Attus lapponicus* SUND. 1833].

Syn.: 1833. ATTUS LAPPONICUS SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl. 1832, p. 212.

1868. „ RICINIATUS SIM., Monogr. d. Attides, p. 37 (27).

1871. „ „ ID., Révis. d. Attidæ, p. 150 (26).

Of this species, which WESTRING had not seen, only one single full-grown specimen has hitherto been with met in Sweden: it was captured in Lappland by Professor J. W. ZETTERSTEDT.

A ♀ *jun.* from the Finnish Lappmark (Enare), which I received from the late Prof. AL. v. NORDMANN, and which certainly belongs to this species<sup>2)</sup>, has by SIMON, to whom I sent it, been recognized as

1) Descr. and fig. of the Aran. of the U. S., in Boston Journ. of Nat. Hist., V, p. 359, Pl. XXI, fig. 19.

2) *A. lapponicus* SUND. — *Fem. jun.* — Simillima *A. crucigero* ♀; differt vero abdomine et pedibus anticis, cum 4:ti paris pedibus comparatis, brevioribus, aculeis subter in tibiis et metatarsis anticis longioribus, pictura abdominis crucem non formanti, pedibus non basi late clarius testaceis, cet. — *Cephalothorax* ad formam ut in *A. crucigero*, impressione profunda inter oculos posticos aliisque duabus pone eam / \ fere formantibus, antice tamen minus angustatus et in lateribus minus fortiter rotundatus quam in illa specie; quadrangulo oculorum igitur postice vix latiore quam antice, oculis præterea ut in *A. crucigero* ordinatis omnino. *Cephalothorax* niger, summo margine albo-piloso; præterea versus latera pilis albis sparsus est, in dorso quoque pilis albicantibus et, præsertim antice, sub-cinereis sat dense munitus; facie infra oculos virescenti-glaucos seriei anticæ dense albo-pilosa, pilis oculos anticos medios supra cingentibus cinereis vel sub-testaceis. *Sternum* nigrum, cum pedibus subter albedo-pilosum. *Mandibulæ* piceæ; *maxillæ* et *labium* picea quoque, apice pallida. *Palporum* pars femoralis ad



an *A. riciniatus* SIM. SIMON had already previously (Monogr. d Attides, loc. cit.) expressed the suspicion, that *A. lapponicus* SUND. might possibly be identical with *A. riciniatus* SIM. from the Alps and Pyrenees.

**List of the Spiders described in WESTRING'S  
'Araneæ Suecicæ'.**

|                        |   |                                         |          |     |
|------------------------|---|-----------------------------------------|----------|-----|
| <i>Epeira angulata</i> | = | { <i>Epeira angulata</i> (CLERCK) 1757. | See pag. | 3.  |
|                        |   | „ <i>Nordmannii</i> THOR. 1870.         | „ „      | 3.  |
| „ <i>diademata</i>     | = | „ <i>diademata</i> (CLERCK) 1757.       | „ „      | 8.  |
| „ <i>pyramidata</i>    | = | „ <i>marmorea</i> (CLERCK) 1757, Var.   | „ „      | 9.  |
| „ <i>marmorea</i>      | = | „ <i>marmorea</i> (CLERCK) 1757.        | „ „      | 9.  |
| „ <i>quadrata</i>      | = | „ <i>quadrata</i> (CLERCK) 1757.        | „ „      | 13. |
| „ <i>umbratica</i>     | = | „ <i>umbratica</i> (CLERCK) 1757.       | „ „      | 14. |
| „ <i>sclopetaria</i>   | = | „ <i>sclopetaria</i> (CLERCK) 1757.     | „ „      | 15. |
| „ <i>cornuta</i>       | = | „ <i>cornuta</i> (CLERCK) 1757.         | „ „      | 15. |
| „ <i>patagiata</i>     | = | „ <i>patagiata</i> (CLERCK) 1757.       | „ „      | 16. |
| „ <i>lutea</i>         | = | „ <i>alsine</i> WALCK. 1802.            | „ „      | 17. |
| „ <i>conica</i>        | = | <i>Cyrtophora conica</i> (PALLAS) 1772. | „ „      | 18. |
| „ <i>sollers</i>       | = | <i>Epeira sollers</i> WALCK. 1830.      | „ „      | 18. |
| „ <i>bicornis</i>      | = | „ <i>omæda</i> THOR. 1870.              | „ „      | 19. |
| „ <i>dromedaria</i>    | = | „ <i>dromedaria</i> WALCK. 1802.        | „ „      | 21. |
| „ <i>Westringii</i>    | = | „ <i>Westringii</i> THOR. 1856.         | „ „      | 22. |
| „ <i>cucurbitina</i>   | = | „ <i>cucurbitina</i> (CLERCK) 1757.     | „ „      | 23. |
| „ <i>adianta</i>       | = | „ <i>adianta</i> WALCK. 1802.           | „ „      | 23. |
| „ <i>agalena</i>       | = | „ <i>agalena</i> WALCK. 1802.           | „ „      | 23. |
| „ <i>ceropegia</i>     | = | „ <i>ceropegia</i> WALCK. 1802.         | „ „      | 24. |

maximam partem fusca, patellaris et tibialis clariores, fusco-sub-maculatæ, tarsalis flava: omnes partes albido-pilosæ. *Pedum* proportio: 3, 4, 1, 2; 1:mi paris cephalothorace dimidio, 3:tii paris eo duplo longiores, 1:mi paris reliquis crassiores, patella æque longa fere atque tibia; patella + tibia + metatarsus + tarsus 1:mi paris patellam + tibiam + metatarsum + *dimidium* (non ut in *A. crucigero* ♀ totum) tarsum æquant. *Abdomen* nigrum, in dorso pilis rufescentibus et albicantibus sparsum; per totum dorsum a basi usque ad mamillas linea albo-pilosa extensa est, non omnino continua, sed potius ex maculis parvis, præsertim postice  $\wedge$ -formibus vel triangularibus composita; latera abdominis quoque dense albo-pilosa, fasciis 2—3 minus distinctis obliquis fuscis sub-variata; venter sat dense albicanti-pilosus.

Feminam unam tantum juniorem ex Enare Lapponiæ, 5 millim. longam, a Cel. AL. V. NORDMANN dono mihi datam, in spiritu vini asservatam vidi. Cephalothorax in hoc exemplo 3 millim. longus et 2 millim. latus est, pedes 1:mi paris  $4\frac{1}{2}$ , 2:di  $3\frac{1}{2}$ , 3:tii 6, 4:ti  $5\frac{1}{2}$  millim. circiter longi.

|                      |   |                                                |              |
|----------------------|---|------------------------------------------------|--------------|
| Singa Herii          | = | <i>Singa pygmæa</i> (SUND.) 1830.              | See pag. 26. |
| „ albo-vittata       | = | „ <i>albo-vittata</i> WESTR. 1851.             | „ „ 28.      |
| „ melanocephala      | = | „ <i>hamata</i> (CLERCK) 1757.                 | „ „ 28.      |
| „ prominens          | { | = <i>Cercidia prominens</i> (WESTR.) 1851.     | „ „ 30.      |
| „ scutifera          |   |                                                |              |
| Zilla atrica         | = | <i>Zilla atrica</i> (C. KOCH) 1845.            | „ „ 31.      |
| „ x-notata           | = | „ <i>x-notata</i> (CLERCK) 1757.               | „ „ 31.      |
| „ montana            | = | „ <i>Stræmii</i> THOR. 1870.                   | „ „ 34.      |
| Meta fusca           | = | <i>Meta Merianæ</i> (SCOP.) 1763.              | „ „ 36.      |
| „ Menardi            | = | „ <i>Menardi</i> (LATR.) 1804.                 | „ „ 38.      |
| „ segmentata         | = | „ <i>segmentata</i> (CLERCK) 1757.             | „ „ 39.      |
| „ albimacula         | = | „ <i>Mengii</i> (BLACKW.) 1870 <sup>1)</sup> . |              |
| Tetragnatha extensa  | { | = <i>Tetragnatha extensa</i> (LINN.) 1758.     | „ „ 40.      |
| „ obtusa             |   |                                                |              |
| Mithras paradoxus    | = | <i>Hyptiotes paradoxus</i> (C. KOCH) 1834.     | „ „ 43.      |
| Linyphia montana     | = | <i>Linyphia montana</i> (CLERCK) 1757.         | „ „ 44.      |
| „ clathrata          | = | „ <i>clathrata</i> SUND. 1830.                 | „ „ 45.      |
| „ triangularis       | = | „ <i>triangularis</i> (CLERCK) 1757.           | „ „ 46.      |
| „ phrygiana          | = | „ <i>phrygiana</i> C. KOCH 1836.               | „ „ 48.      |
| „ hortensis          | = | „ <i>hortensis</i> SUND. 1830.                 | „ „ 48.      |
| „ pusilla            | = | „ <i>pusilla</i> SUND. 1830.                   | „ „ 50.      |
| „ peltata            | = | „ <i>peltata</i> REUSS 1834.                   | „ „ 51.      |
| „ marginata          | = | „ <i>marginata</i> C. KOCH 1834.               | „ „ 51.      |
| „ thoracica          | = | „ <i>thoracica</i> REUSS 1834.                 | „ „ 52.      |
| „ bucculenta         | = | „ <i>bucculenta</i> (CLERCK) 1757.             | „ „ 53.      |
| „ frenata            | = | „ <i>frenata</i> REUSS 1834.                   | „ „ 54.      |
| „ crypticola         | = | „ <i>nebulosa</i> SUND. 1830.                  | „ „ 54.      |
| „ domestica          | { | „ <i>minuta</i> BLACKW. 1833.                  | „ „ 55.      |
|                      |   | „ <i>leprosa</i> OHL. 1865.                    | „ „ 55.      |
| „ tenebricola        | = | „ <i>alacris</i> BLACKW. 1853.                 | „ „ 57.      |
| „ alticeps           | = | „ <i>alticeps</i> SUND. 1833.                  | „ „ 59.      |
| „ affinis            | = | „ <i>luteola</i> BLACKW. 1833.                 | „ „ 63.      |
| „ pallescens         | = | „ <i>insignis</i> BLACKW. 1841.                | „ „ 63.      |
| „ rufa               | = | „ <i>scopigera</i> GRUBE 1859.                 | „ „ 64.      |
| „ comata             | = | „ <i>bicolor</i> BLACKW. 1833.                 | „ „ 64.      |
| „ socialis           | = | „ <i>socialis</i> SUND. 1833.                  | „ „ 65.      |
| „ pygmæa             | = | „ <i>tenebricola</i> REUSS 1834.               | „ „ 65.      |
| „ angulipalpis       | = | „ <i>angulipalpis</i> WESTR. 1851.             | „ „ 68.      |
| „ index              | = | „ <i>index</i> THOR. 1856.                     | „ „ 68.      |
| „ decolor            | = | „ <i>decolor</i> WESTR. 1861.                  | „ „ 69.      |
| „ nigrina            | = | „ <i>nigrina</i> WESTR. 1851.                  | „ „ 69.      |
| „ concolor           | = | „ <i>concolor</i> REUSS 1834.                  | „ „ 70.      |
| „ parvula            | = | „ <i>parvula</i> WESTR. 1851.                  | „ „ 71.      |
| „ convexa            | = | „ <i>convexa</i> WESTR. 1851.                  | „ „ 71.      |
| „ gracilis           | = | „ <i>variegata</i> (BLACKW.) 1841.             | „ „ 71.      |
| „ dorsalis           | = | „ <i>dorsalis</i> REUSS 1834.                  | „ „ 73.      |
| Tapinopa longidens   | = | <i>Tapinopa longidens</i> (REUSS) 1834.        | „ „ 74.      |
| Pachygnatha Clerckii | = | <i>Pachygnatha Clerckii</i> SUND. 1823.        | „ „ 75.      |

|                     |   |                                              |          |      |
|---------------------|---|----------------------------------------------|----------|------|
| Pachygnatha Listeri | = | <i>Pachygnatha Listeri</i> SUND. 1830.       | See pag. | 75.  |
| „ De Geeri          | = | „ <i>De Geeri</i> SUND. 1830.                | „ „      | 76.  |
| Ero variegata       | = | <i>Ero thoracica</i> (REUSS) 1834.           | „ „      | 77.  |
| „ tuberculata       | = | „ <i>tuberculata</i> (DE GEER) 1778.         | „ „      | 77.  |
| Theridium lineatum  | = | <i>Phyllonethis lineata</i> (CLERCK) 1757.   | „ „      | 78.  |
| „ cellulanum        | = | <i>Nesticus cellulanus</i> (CLERCK) 1757.    | „ „      | 79.  |
| „ tepidariorum      | = | <i>Theridium tepidariorum</i> C. KOCH 1841.  | „ „      | 80.  |
| „ formosum          | = | „ <i>formosum</i> (CLERCK) 1757.             | „ „      | 81.  |
| „ saxatile          | = | „ <i>riparium</i> BLACKW. 1834.              | „ „      | 82.  |
| „ pictum            | = | „ <i>pictum</i> WALCK. 1802.                 | „ „      | 83.  |
| „ denticulatum      | = | „ <i>denticulatum</i> WALCK. 1802.           | „ „      | 83.  |
| „ simile            | = | „ <i>simile</i> C. KOCH 1836.                | „ „      | 84.  |
| „ tinctum           | = | „ <i>tinctum</i> WALCK. 1802.                | „ „      | 84.  |
| „ varians           | = | „ <i>variens</i> HAHN 1831.                  | „ „      | 85.  |
| „ minimum           | = | „ <i>Ohlertii</i> THOR. 1870.                | „ „      | 85.  |
| „ sisyprium         | = | „ <i>sisyprium</i> (CLERCK) 1757.            | „ „      | 86.  |
| „ bimaculatum       | = | „ <i>bimaculatum</i> (LINN.) 1767.           | „ „      | 87.  |
| „ serratipes        | = | <i>Asagena phalerata</i> (PANZ.) 1801.       | „ „      | 87.  |
| „ undulatum         | = | <i>Theridium undulatum</i> WESTR. 1861.      | „ „      | 88.  |
| „ pulchellum        | = | „ <i>pulchellum</i> WALCK. 1802.             | „ „      | 89.  |
| „ hamatum           | = | <i>Steatoda versuta</i> (BLACKW.) 1846.      | „ „      | 89.  |
| „ castaneum         | = | „ <i>castanea</i> (CLERCK) 1757.             | „ „      | 91.  |
| „ bipunctatum       | = | „ <i>bipunctata</i> (LINN.) 1758.            | „ „      | 91.  |
| „ albo-maculatum    | = | <i>Lithyphantes corollatus</i> (LINN.) 1758. | „ „      | 92.  |
| „ guttatum          | = | <i>Steatoda guttata</i> (REUSS) 1834.        | „ „      | 93.  |
| „ triste            | = | <i>Theridium triste</i> HAHN 1831.           | „ „      | 93.  |
| „ lætum             | = | <i>Euryopsis læta</i> (WESTR.) 1861.         | „ „      | 95.  |
| „ flavo-maculatum   | = | „ <i>flavo-maculata</i> (C. KOCH) 1836.      | „ „      | 95.  |
| Episinus truncatus  | = | <i>Episinus truncatus</i> WALCK. 1809.       | „ „      | 96.  |
| Erigone longipalpis | = | <i>Erigone longipalpis</i> (SUND.) 1830.     | „ „      | 98.  |
| „ dentipalpis       | = | „ <i>dentipalpis</i> (REUSS) 1834.           | „ „      | 101. |
| „ vagabunda         | = | „ <i>atra</i> BLACKW. 1833.                  | „ „      | 102. |
| „ nudipalpis        | = | „ <i>nudipalpis</i> WESTR. 1851.             | „ „      | 102. |
| „ inflexa           | = | „ <i>inflexa</i> WESTR. 1861.                | „ „      | 103. |
| „ longimana         | = | „ <i>longimana</i> C. KOCH 1841.             | „ „      | 103. |
| „ scabristernis     | = | „ <i>nigra</i> (BLACKW.) 1834.               | „ „      | 104. |
| „ bicuspidata       | = | „ <i>cornuta</i> (BLACKW.) 1833.             | „ „      | 105. |
| „ bituberculata     | = | „ <i>bituberculata</i> (REUSS) 1834.         | „ „      | 106. |
| „ capito            | = | „ <i>capito</i> WESTR. 1861.                 | „ „      | 106. |
| „ antica            | = | „ <i>antica</i> (REUSS) 1834.                | „ „      | 107. |
| „ bicornis          | = | „ <i>cristata</i> (BLACKW.) 1833.            | „ „      | 108. |
| „ cornuta           | = | „ <i>acuminata</i> (BLACKW.) 1833.           | „ „      | 109. |
| „ conica            | = | „ <i>frontata</i> (BLACKW.) 1833.            | „ „      | 110. |
| „ monoceros         | = | „ <i>monoceros</i> (REUSS) 1834.             | „ „      | 110. |
| „ gibbicollis       | = | „ <i>apicata</i> (BLACKW.) 1850.             | „ „      | 112. |
| „ elevata           | = | „ <i>bifrons</i> (BLACKW.) 1841.             | „ „      | 113. |
| „ Thorellii         | = | „ <i>Thorellii</i> WESTR. 1861.              | „ „      | 114. |
| „ acuminata         | = | „ <i>altifrons</i> (CAMBR.) 1863.            | „ „      | 115. |

|                             |   |                                                       |               |
|-----------------------------|---|-------------------------------------------------------|---------------|
| <i>Erigone crassiceps</i>   | = | <i>Erigone crassiceps</i> WESTR. 1861.                | See pag. 116. |
| „ <i>elongata</i>           | = | „ <i>elongata</i> (REUSS) 1834.                       | „ „ 116.      |
| „ <i>semiglobosa</i>        | = | „ <i>semi-globosa</i> WESTR. 1861.                    | „ „ 119.      |
| „ <i>erythropus</i>         | = | „ <i>erythropus</i> WESTR. 1851.                      | „ „ 119.      |
| „ <i>pusilla</i>            | = | „ <i>pusilla</i> (REUSS) 1834.                        | „ „ 120.      |
| „ <i>parallela</i>          | = | „ <i>Reussii</i> THOR. 1871.                          | „ „ 121.      |
| „ <i>coriacea</i>           | = | „ <i>hiemalis</i> (BLACKW.) 1841.                     | „ „ 122.      |
| „ <i>impolita</i>           | = | „ <i>obscura</i> (BLACKW.) 1834.                      | „ „ 123.      |
| „ <i>rugulosa</i>           | = | „ <i>rugulosa</i> WESTR. 1851.                        | „ „ 123.      |
| „ <i>scabricula</i>         | = | „ <i>scabricula</i> WESTR. 1851.                      | „ „ 123.      |
| „ <i>subæqualis</i>         | = | „ <i>sub-æqualis</i> WESTR. 1851.                     | „ „ 124.      |
| „ <i>retusa</i>             | = | „ <i>retusa</i> WESTR. 1851.                          | „ „ 125.      |
| „ <i>simplex</i>            | = | „ <i>fusca</i> (BLACKW.) 1834.                        | „ „ 125.      |
| „ <i>graminicola</i>        | = | „ <i>graminicola</i> (SUND.) 1830.                    | „ „ 126.      |
| „ <i>rufipes</i>            | = | „ <i>rufipes</i> (LINN.) 1758.                        | „ „ 126.      |
| „ <i>dentifera</i>          | = | „ <i>graminicola</i> (SUND.) 1830, Var. <sup>1)</sup> | „ „ 127.      |
| „ <i>dentata</i>            | = | „ <i>dentata</i> (REUSS) 1834.                        | „ „ 128.      |
| „ <i>chelifera</i>          | = | „ <i>rubens</i> (BLACKW.) 1833.                       | „ „ 129.      |
| „ <i>isabellina</i>         | = | „ <i>isabellina</i> (C. KOCH) 1841.                   | „ „ 129.      |
| „ <i>robusta</i>            | = | { „ <i>robusta</i> WESTR. 1851.                       | „ „ 130.      |
|                             |   | { „ <i>rufa</i> (REUSS) 1834.                         | „ „ 130.      |
| „ <i>pinguis</i>            | = | { „ <i>livida</i> (BLACKW.) 1836.                     | „ „ 131.      |
|                             |   | { „ <i>arundineti</i> (CAMBR.) 1871 <sup>1)</sup> .   | „ „ 131.      |
| „ <i>erythrocephala</i>     | = | „ <i>rufa</i> (REUSS) 1834.                           | „ „ 132.      |
| „ <i>silvestris</i>         | = | „ <i>silvatica</i> (BLACKW.) 1841.                    | „ „ 134.      |
| „ <i>æqualis</i>            | = | „ <i>brevipalpis</i> (MENGE) 1866.                    | „ „ 135.      |
| „ <i>quisquiliarum</i>      | = | „ <i>viaria</i> (BLACKW.) 1841.                       | „ „ 136.      |
| „ <i>gibba</i>              | = | <i>Pholcomma gibbum</i> (WESTR.) 1851.                | „ „ 137.      |
| „ <i>parasitica</i>         | = | <i>Erigone parasitica</i> WESTR. 1851.                | „ „ 138.      |
| „ <i>tessellata</i>         | = | „ <i>tessellata</i> WESTR. 1851.                      | „ „ 138.      |
| „ <i>compar</i>             | = | „ <i>compar</i> WESTR. 1861.                          | „ „ 140.      |
| „ <i>rurestris</i>          | = | „ <i>fuscipalpis</i> (C. KOCH) 1836.                  | „ „ 140.      |
| „ <i>penicillata</i>        | = | „ <i>penicillata</i> WESTR. 1851.                     | „ „ 141.      |
| „ <i>Sundevallii</i>        | = | „ <i>Sundevallii</i> WESTR. 1851.                     | „ „ 142.      |
| „ <i>phæopus</i>            | = | „ <i>brevis</i> (REUSS) 1834.                         | „ „ 142.      |
| „ <i>brevipes</i>           | = | „ <i>brevipes</i> WESTR. 1851.                        | „ „ 143.      |
| <i>Pholcus opilionoides</i> | = | <i>Pholcus phalangioides</i> (FUESSL.) 1775.          | „ „ 145.      |
| <i>Segestria bavarica</i>   | = | <i>Segestria bavarica</i> C. KOCH 1843.               | „ „ 152.      |
| „ <i>senoculata</i>         | = | „ <i>senoculata</i> (LINN.) 1758                      | „ „ 152.      |
| <i>Dysdera Hombergii</i>    | = | <i>Harpactes Hombergii</i> (SCOP.) 1763.              | „ „ 153.      |
| <i>Tegenaria atrica</i>     | = | <i>Tegenaria atrica</i> C. KOCH 1843.                 | „ „ 154.      |
| „ <i>domestica</i>          | = | „ <i>domestica</i> (CLERCK) 1757.                     | „ „ 155.      |
| „ <i>civilis</i>            | = | „ <i>Derhamii</i> (SCOP.) 1763.                       | „ „ 157.      |
| <i>Agelena labyrinthica</i> | = | <i>Agelena labyrinthica</i> (CLERCK) 1757.            | „ „ 159.      |
| <i>Textrix lycosina</i>     | = | <i>Textrix denticulata</i> (OLIV.) 1789.              | „ „ 160.      |
| <i>Agræca linotina</i>      | = | <i>Agræca brunnea</i> (BLACKW.) 1833.                 | „ „ 162.      |

1) See also "Additions and Corrections" at the end of this volume.

|                       |   |                                                  |               |
|-----------------------|---|--------------------------------------------------|---------------|
| Hahnia pusilla        | = | Hahnia nava (BLACKW.) 1841.                      | See pag. 163. |
| „ pratensis           | = | Cryphaea arietina THOR. 1871.                    | „ „ 165.      |
| „ silvicola           | = | „ silvicola (C. KOCH) 1834.                      | „ „ 167.      |
| Apostenus fuscus      | = | Apostenus fuscus WESTR. 1851.                    | „ „ 167.      |
| Zora spinimana        | = | Zora maculata (BLACKW.) 1833.                    | „ „ 168.      |
| Phrurolithus festivus | = | Phrurolithus festivus C. KOCH 1835.              | „ „ 169.      |
| „ minimus             | = | „ minimus C. KOCH 1839.                          | „ „ 169.      |
| Micaria fulgens       | = | Micaria fulgens (WALCK.) 1802.                   | „ „ 170.      |
| „ pulicaria           | = | „ pulicaria (SUND.) 1832.                        | „ „ 173.      |
| „ nitens              | = | „ „ (SUND.) 1832, Var.?                          | „ „ 174.      |
| „ subopaca            | = | „ sub-opaca WESTR. 1861.                         | „ „ 175.      |
| Drassus rubrens       | { | = Drassus quadri-punctatus (LINN.) 1758.         | „ „ 176.      |
| „ sericeus            |   |                                                  |               |
| „ fuscus              | = | „ scutulatus L. KOCH 1866.                       | „ „ 181.      |
| „ cognatus            | = | „ cognatus WESTR. 1861.                          | „ „ 182.      |
| „ troglodytes         | = | „ troglodytes C. KOCH 1839.                      | „ „ 183.      |
| „ infuscatus          | = | „ infuscatus WESTR. 1851.                        | „ „ 183.      |
| „ angustifrons        | = | „ angustifrons WESTR. 1861.                      | „ „ 185.      |
| Pythonissa lucifuga   | = | Gnaphosa lucifuga (WALCK.) 1802.                 | „ „ 187.      |
| „ lugubris            | = | „ muscorum (L. KOCH) 1866.                       | „ „ 190.      |
| „ femoralis           | = | „ bicolor (HAHN) 1831.                           | „ „ 191.      |
| „ fumosa              | = | „ fumosa (C. KOCH) 1843.                         | „ „ 192.      |
| Melanophora subter-   | { | Prothesima <sup>1)</sup> Petiverii (SCOP.) 1763. | „ „ 194.      |
| ranea                 |   |                                                  |               |
| „ petrensis           | = | „ petrensis (C. KOCH) 1839.                      | „ „ 194.      |
| „ pusilla             | = | „ tristis THOR. 1871.                            | „ „ 194.      |
| „ nocturna            | = | „ mærens THOR. 1871.                             | „ „ 197.      |
| „ variana             | = | „ nigrita (FABR.) 1775.                          | „ „ 199.      |
| Drassodes lapidicola  | = | Gnaphosa nocturna (LINN.) 1758.                  | „ „ 199.      |
| „ villosus            | = | „ variana (C. KOCH) 1839.                        | „ „ 201.      |
| „ pubescens           | = | Drassodes lapidicola (WALCK.) 1802.              | „ „ 202.      |
| „ gracilis            | = | „ villosus THOR. 1856.                           | „ „ 202.      |
| Argyroneta aquatica   | = | „ pubescens THOR. 1856.                          | „ „ 203.      |
| Anyphæna accentuata   | = | „ gracilis (WESTR.) 1861.                        | „ „ 203.      |
| Amaurobius ferox      | = | Argyroneta aquatica (CLERCK) 1757.               | „ „ 203.      |
| „ atrox               | = | Anyphæna accentuata (WALCK.) 1802.               | „ „ 204.      |
| Cheiracanthium nutrix | = | Amaurobius ferox (WALCK.) 1830.                  | „ „ 204.      |
| „ erraticum           | = | „ fenestralis (STRGM) 1768.                      | „ „ 205.      |
| Dictyna arundinacea   | = | Cheiracanthium nutrix (WALCK.) 1802.             | „ „ 207.      |
| „ pusilla             | = | „ carnifex (FABR.) 1775.                         | „ „ 209.      |
| „ uncinata            | = | Dictyna arundinacea (LINN.) 1758.                | „ „ 210.      |
| „ latens              | = | „ pusilla THOR. 1856.                            | „ „ 211.      |
| * „ pectita           | = | „ uncinata THOR. 1856.                           | „ „ 212.      |
| Clubiona pallidula    | = | „ latens (FABR.) 1775.                           | „ „ 212.      |
| „ holosericea         | = | „ pectita SUND. 1832.                            | „ „ 213.      |
|                       | = | Clubiona pallidula (CLERCK) 1757.                | „ „ 213.      |
|                       | = | „ holosericea (DE GEER) 1778.                    | „ „ 217.      |

1) See "Additions and Corrections".

|                                |                                                     |               |
|--------------------------------|-----------------------------------------------------|---------------|
| <i>Clubiona lutescens</i>      | = <i>Clubiona lutescens</i> WESTR. 1851.            | See pag. 221. |
| „ <i>terrestris</i>            | = „ <i>terrestris</i> WESTR. 1851.                  | „ „ 222.      |
| „ <i>erratica</i>              | = „ <i>erratica</i> C. KOCH 1836.                   | „ „ 222.      |
| „ <i>trivialis</i>             | = „ <i>borealis</i> THOR. 1871.                     | „ „ 223.      |
| „ <i>fuscula</i>               | = „ <i>brevipes</i> BLACKW. 1841.                   | „ „ 224.      |
| „ <i>corticalis</i>            | = „ <i>corticalis</i> WALCK. 1802.                  | „ „ 225.      |
| „ <i>compta</i>                | = „ <i>compta</i> C. KOCH 1839.                     | „ „ 225.      |
| „ <i>pallens</i>               | = „ <i>trivialis</i> C. KOCH 1841.                  | „ „ 225.      |
| <i>Sparassus virescens</i>     | = <i>Micrommata virescens</i> (CLERCK) 1757.        | „ „ 227.      |
| „ <i>ornatus</i>               | = „ <i>ornata</i> (WALCK.) 1802 <sup>1)</sup> .     | „ „ 228.      |
| <i>Thomisus lanio</i>          | = <i>Xysticus impavidus</i> THOR. 1872.             | „ „ 230.      |
| „ <i>bifasciatus</i>           | = „ <i>bifasciatus</i> C. KOCH 1837.                | „ „ 234.      |
| „ <i>bivittatus</i>            | = „ <i>ulmi</i> (HAHN) 1831.                        | „ „ 235.      |
| „ <i>cristatus</i>             | = { „ <i>cristatus</i> (CLERCK) 1757.               | „ „ 236.      |
| „ <i>calcaratus</i>            | = { „ <i>pini</i> (HAHN) 1831 ♂ <sup>1)</sup> .     |               |
| „ <i>audax</i>                 | = { „ <i>calcaratus</i> (WESTR.) 1861.              | „ „ 242.      |
| „ <i>cinereus</i>              | = { „ <i>luctuosus</i> (BLACKW.) 1836.              | „ „ 243.      |
| „ <i>ulmi</i>                  | = { „ <i>calcaratus</i> (WESTR.) 1861 ♀?            | „ „ 243.      |
| „ <i>lineatus</i>              | = { „ <i>pini</i> (HAHN) 1831 ♀ <sup>1)</sup> .     |               |
| „ <i>sabulosus</i>             | = { „ <i>ulmi</i> (HAHN) 1831.                      | „ „ 246.      |
| „ <i>setosus</i>               | = { „ <i>erraticus</i> (BLACKW.) 1834.              | „ „ 246.      |
| „ <i>depressus</i>             | = { „ <i>lineatus</i> (WESTR.) 1851.                | „ „ 248.      |
| „ <i>dorsatus</i>              | = { „ <i>sabulosus</i> (HAHN) 1831.                 | „ „ 249.      |
| „ <i>horticola</i>             | = { „ <i>setosus</i> (WESTR.) 1851.                 | „ „ 250.      |
| „ <i>brevipes</i>              | = „ <i>Coriarachne depressa</i> (C. KOCH) 1837.     | „ „ 251.      |
| „ <i>scabriculus</i>           | = „ <i>Dicaea dorsata</i> (FABR.) 1777.             | „ „ 252.      |
| „ <i>vatius</i>                | = „ <i>Xysticus horticola</i> C. KOCH 1837.         | „ „ 252.      |
| „ <i>horridus</i>              | = „ <i>Westringii</i> THOR. <sup>1)</sup>           |               |
| <i>Philodromus fuscocomar-</i> | = „ <i>scabriculus</i> (WESTR.) 1851.               | „ „ 257.      |
| <i>ginatus</i>                 | = „ <i>Misumena vatia</i> (CLERCK) 1757.            | „ „ 258.      |
| „ <i>cinereus</i>              | = „ <i>truncata</i> (PALL.) 1772.                   | „ „ 259.      |
| „ <i>limbatus</i>              | = „ <i>Artanes fusco-marginatus</i> (DE GEER) 1778. | „ „ 259.      |
| „ <i>tigrinus</i>              | = „ <i>Philodromus dispar</i> WALCK. 1825.          | „ „ 260.      |
| „ <i>margaritatus</i>          | = „ <i>Artanes pæcilus</i> THOR. 1872.              | „ „ 261.      |
| „ <i>aureolus</i>              | = „ <i>margaritatus</i> (CLERCK) 1757.              | „ „ 262.      |
| „ <i>cæspiticolis</i>          | = „ <i>Philodromus aureolus</i> (CLERCK) 1857.      | „ „ 264.      |
| „ <i>decorus</i>               | = „ <i>auro-nitens</i> AUSS. 1867.                  | „ „ 266.      |
| „ <i>fallax</i>                | = „ <i>elegans</i> BLACKW. 1859.                    | „ „ 268.      |
| „ <i>griseus</i>               | = „ <i>Artanes fallax</i> (SUND.) 1833.             | „ „ 268.      |
| „ <i>oblongus</i>              | = „ <i>pallidus</i> (WALCK.) 1825.                  | „ „ 268.      |
| „ <i>formicinus</i>            | = „ <i>Thanatus oblongus</i> (WALCK.) 1802.         | „ „ 269.      |
|                                | = { „ <i>formicinus</i> (CLERCK) 1757.              | „ „ 269.      |
|                                | = { „ <i>arenarius</i> THOR. 1872?                  | „ „ 269.      |
| <i>Lycosa septentrionalis</i>  | = <i>Lycosa septentrionalis</i> WESTR. 1861.        | „ „ 272.      |

1) See "Additions and Corrections".

|                              |                                                    |      |
|------------------------------|----------------------------------------------------|------|
| <i>Lycosa nemoralis</i>      | = <i>Tarentula meridiana</i> (HAHN) 1831. See pag. | 274. |
| „ <i>silvicola</i>           | = <i>Lycosa lugubris</i> WALCK. 1802.              | 276. |
| „ <i>arenaria</i>            | = „ <i>agricola</i> THOR. 1856.                    | 278. |
| „ <i>agrestis</i>            | = „ <i>agrestis</i> WESTR. 1861.                   | 282. |
| „ <i>albo-limbata</i>        | = „ <i>herbigrada</i> BLACKW. 1857.                | 282. |
| „ <i>saccigera</i> }         |                                                    |      |
| „ <i>nigriceps</i> }         | = „ <i>nigriceps</i> THOR. 1856.                   | 283. |
| „ <i>monticola</i>           | = „ <i>monticola</i> (CLERCK) 1857.                | 285. |
| „ <i>tarsalis</i>            | = „ <i>palustris</i> (LINN.) 1758.                 | 288. |
| „ <i>lignaria</i>            | = „ <i>lignaria</i> (CLERCK) 1757.                 | 294. |
| * „ <i>borealis</i>          | = „ <i>borealis</i> SUND. 1833.                    | 297. |
| „ <i>amentata</i>            | = „ <i>amentata</i> (CLERCK) 1757.                 | 298. |
| „ <i>paludicola</i>          | = „ <i>paludicola</i> (CLERCK) 1757.               | 304. |
| „ <i>pullata</i>             | = „ <i>pullata</i> (CLERCK) 1757.                  | 305. |
| „ <i>fabrilis</i>            | = <i>Tarentula fabrilis</i> (CLERCK) 1757.         | 309. |
| „ <i>inquinina</i>           | = „ <i>inquinina</i> (CLERCK) 1757.                | 312. |
| „ <i>pinetorum</i>           | = „ <i>pinetorum</i> THOR. 1856.                   | 316. |
| „ <i>barbipes</i>            | = „ <i>andrenivora</i> (WALCK.) 1825, Var.         | 318. |
| „ <i>trabalis</i>            | = „ <i>trabalis</i> (CLERCK) 1757.                 | 321. |
| „ <i>tæniata</i>             | = „ <i>aculeata</i> (CLERCK) 1757.                 | 323. |
| „ <i>cursor</i>              | = „ „ (CLERCK) 1757, Var.                          | 328. |
| „ <i>pulverulenta</i>        | = „ <i>pulverulenta</i> (CLERCK) 1757.             | 328. |
| „ <i>cuneata</i>             | = „ <i>cuneata</i> (CLERCK) 1757.                  | 330. |
| „ <i>leopardus</i>           | = <i>Pirata leopardus</i> (SUND.) 1833.            | 331. |
| „ <i>cinerea</i>             | = <i>Trochosa cinerea</i> (FABR.) 1793.            | 332. |
| „ <i>picta</i>               | = „ <i>picta</i> (HAHN) 1831.                      | 335. |
| „ <i>ruricola</i>            | = „ <i>ruricola</i> (DE GEER) 1778.                | 336. |
| „ <i>terricola</i>           | = „ <i>terricola</i> THOR. 1856.                   | 339. |
| „ <i>piscatoria</i>          | = <i>Pirata piscatorius</i> (CLERCK) 1757.         | 339. |
| „ <i>piratica</i>            | = „ <i>piraticus</i> (CLERCK) 1757.                | 341. |
| „ <i>uliginosa</i>           | = { „ <i>hygrophilus</i> THOR. 1872.               | 346. |
|                              | „ <i>uliginosus</i> THOR. 1856.                    | 346. |
| <i>Dolomedes fimbriatus</i>  | = { <i>Dolomedes fimbriatus</i> (CLERCK) 1757.     | 346. |
|                              | „ <i>plantarius</i> (CLERCK) 1757.                 | 346. |
| <i>Ocyale mirabilis</i>      | = <i>Ocyale mirabilis</i> (CLERCK) 1757.           | 349. |
| <i>Sphasus lineatus</i>      | = <i>Oxyopes ramosus</i> (PANZ.) 1804.             | 350. |
| <i>Salcticus formicarius</i> | = <i>Salcticus formicarius</i> (DE GEER) 1778.     | 357. |
| <i>Attus histrionicus</i>    | = <i>Epiblemum scenicum</i> (CLERCK) 1757.         | 360. |
| „ <i>scenicus</i>            | = { „ <i>cingulatum</i> (PANZ.) 1797.              | 367. |
|                              | „ <i>tenerum</i> (C. KOCH) 1846.                   | 367. |
| „ <i>muscosus</i>            | = <i>Marpessa muscosa</i> (CLERCK) 1757.           | 367. |
| „ <i>strigipes</i>           | = „ <i>radiata</i> (GRUBE) 1859.                   | 368. |
| „ <i>brevipes</i>            | = <i>Ballus depressus</i> (WALCK.) 1802.           | 370. |
| * „ <i>vulpinus</i>          | = „ (?) <i>vulpinus</i> (WESTR.) 1851.             | 373. |
| „ <i>petrensis</i>           | = <i>Euophrys petrensis</i> C. KOCH 1837.          | 374. |
| „ <i>hastatus</i>            | = <i>Dendryphantus hastatus</i> (CLERCK) 1757.     | 375. |
| „ <i>medius</i>              | = „ <i>rudis</i> (SUND.) 1833.                     | 376. |
| „ <i>v-insignitus</i>        | = <i>Yllenus v-insignitus</i> (CLERCK) 1757.       | 377. |

|                          |                                             |               |
|--------------------------|---------------------------------------------|---------------|
| <i>Attus pubescens</i>   | = <i>Attus pubescens</i> (FABR.) 1775.      | See pag. 381. |
| „ <i>terebratus</i>      | = „ <i>terebratus</i> (CLERCK) 1757.        | „ „ 383.      |
| „ <i>fasciatus</i>       | = <i>Ælurops fasciatus</i> (HAHN) 182..     | „ „ 384.      |
| „ <i>striatus</i>        | = <i>Attus striatus</i> (CLERCK) 1757.      | „ „ 386.      |
| „ <i>sanguinolentus</i>  | = <i>Philaus chrysops</i> (PODA) 1761.      | „ „ 388.      |
| „ <i>arcuatus</i>        | = <i>Attus arcuatus</i> (CLERCK) 1757.      | „ „ 390.      |
| „ <i>crucigerus</i>      | = „ <i>crucigerus</i> WALCK. 1825.          | „ „ 391.      |
| „ <i>floricola</i>       | = „ <i>floricola</i> (C. KOCH) 1837.        | „ „ 391.      |
| „ <i>caricis</i>         | = „ <i>caricis</i> WESTR. 1861.             | „ „ 394.      |
| „ <i>falcatus</i>        | = „ <i>falcatus</i> (CLERCK) 1757.          | „ „ 394.      |
| „ <i>tigrinus</i>        | = „ <i>erraticus</i> WALCK. 1825.           | „ „ 396.      |
| „ <i>cinereus</i>        | = „ <i>cinereus</i> WESTR. 1861.            | „ „ 398.      |
| „ <i>cupreus</i>         | = <i>Heliophanes cupreus</i> (WALCK.) 1802. | „ „ 399.      |
| „ <i>flavipes</i>        | = „ <i>flavipes</i> (HAHN) 1831.            | „ „ 402.      |
| „ <i>lætabundus</i>      | = <i>Euophrys pæcilopus</i> THOR.           | „ „ 403.      |
| „ <i>frontalis</i>       | = { „ <i>reticulata</i> (BLACKW.) 1853.     | „ „ 404.      |
|                          | „ <i>frontalis</i> (WALCK.) 1802.           | „ „ 404.      |
| „ <i>heterophthalmus</i> | = <i>Ballus ænescens</i> (SIM.) 1869.       | „ „ 405.      |
| „ <i>striolatus</i>      | = <i>Euophrys frontalis</i> (WALCK.) 1802.  | „ „ 405.      |
| * „ <i>niger</i>         | = <i>Epiblennum</i> (?) <i>inc. spec.</i>   | „ „ 405.      |
| „ <i>lapponicus</i>      | = <i>Attus lapponicus</i> (SUND.) 1833.     | „ „ 406.      |

## II.

### SYNONYMICAL REMARKS

#### ON SPIDERS DESCRIBED IN BLACKWALL'S 'HISTORY OF THE SPIDERS OF GR. BRITAIN AND IRELAND'.

In the preceding pages I have gone through all the species described by WESTRING in his 'Araneæ Suecicæ': I have endeavoured to give their most important synonyms, and have appended the names, by which it appears that they ought to be designated. As I have already in the beginning of this work intimated (Conf. On Eur. Spid., p. 2), I have had access to specimens determined by WESTRING of nearly all these spiders; the few (4), which I have not myself seen, have been marked with an \*. As I am now going to make a contribution towards a similar revision of BLACKWALL'S 'History of the Spiders of Gr. Britain and Ireland', I must not omit to mention, that I am by no means in the same favourable situation with regard to that important work; and although the Rev. O. P. CAMBRIDGE (who, as Mr BLACKWALL himself had the kindness to inform me, has at present



the custody of his collection of British spiders) has assisted me with the utmost kindness and liberality both in word and deed, still the number of British spiders, especially of the genera *Linyphia*, *Neriene* and *Walckenaera*, which I have not myself seen, is very considerable; of many indeed the types are no more in existence<sup>1)</sup>.

Most of BLACKWALL'S species have been also described by WESTRING, and for these I need only refer to the corresponding articles in the foregoing pages. A great number of the rest are to me unknown, and of these — which I have marked with an \* — I have in most instances little or nothing to say. It is therefore for a *part* only of the species described by BLACKWALL and not taken up in WESTRING'S work, that I am here going to account in the same manner as I have done for the last-mentioned author's species; but I shall afterwards give a complete list of the spiders described in the 'Hist. of the Spid. of Gr. Britain and Ireland', together with a statement of the name which I believe ought to belong to each of them, the year in which the assumed specific name was published, and the work in which this publication took place, or, instead of these last-mentioned particulars, a reference to the place in the present work, where the species may have been more fully treated of.

(Pag. 14.) *Atypus Sulzeri* [= *Atypus affinis* EICHW. 1830 + *Atypus piceus* (SULZ.) 1776].

Mas (*A. affinis*):

- Syn.: 1830. ATYPUS AFFINIS EICHW., Zool. spec., P. alt., p. 73, Tab. II, fig. 19.  
 1871. „ ANACHORETA AUSS., Beitr. z. Kenntn. d. Arachn.-fam. d. Ter-  
 ritelariæ, in Verhandl. d. zool.-bot. Gesellsch.  
 in Wien, XXI, p. 133 (17).

Femina (*A. piceus*):

- Syn.: 1776. ARANEA PICEA SULZER, Gesch. d. Ins., p. 254, Tab. XXX, fig. 2.  
 1789. { „ AQUATICA } RÖMER, Gen. Ins., p. 66, Tab. XXX, fig. 2.  
 { „ SUBTERRANEA }  
 1804. ATYPUS SUBTERRANEUS LATR., H. N. d. Crust. et d. Ins., VII, p. 169.  
 1805. OLETERA ATYPUS WALCK., Tabl. d. Aran., p. 7, Pl. I, figg. 8—10.  
 1806. ATYPUS SULZERI LATR., Gen. Crust. et Ins., I, p. 85, Tab. III, fig. 3.  
 1820. „ „ DUF., Observ. s. quelques Arachn. quadripulm., in  
 Ann. gén. d. Sc. Phys., V, p. 109, Pl. LXXXIII, fig. 6.

1) They were, Mr BLACKWALL informs me, lost or destroyed during the protracted illness of the artist who made a large portion of the drawings for Mr BLACKWALL'S great work.

1831. ATYPUS SULZERI HAHN, Die Arachn., I, p. 117, Tab. XXXI, fig. 88.  
 1848. " " C. KOCH, *ibid.*, XVI, p. 72, Tab. DLXII, figg.  
 1547, 1548 (*salt. ad part.*).  
 1859. OLETERA PICEA LUCAS, De la manière de vivre, *cet.*, de l'Olet. picea,  
*in* Ann. de la Soc. Ent. de France, 3 Sér., VII,  
 Bull., p. CLXX.  
 1870. ATYPUS PICEUS THOR., On Eur. Spid., p. 165.  
 1871. " " AUSS., Beitr. z. Kenntn. d. Territ., p. 131 (15).  
 1871. " SULZERI K. KOCH, Lebensweise, *cet.*, einer central-europ.  
 Würgspinne, Atypus Sulzeri, *in* Der Zool. Garten,  
 XII, p. 289, 329.

AUSSERER remarks (*loc. cit.*, p. 133 (17)) that, if BLACKWALL'S figures are to be trusted, that author's *A. Sulzeri* is a different species from the true *A. Sulzeri* or *piceus*, and he proposes for it, if this be the case, the name *A. Blackwallii*. How the case really stands with regard to this English species, the following considerations will perhaps in some degree serve to show. Through the kindness of the Rev. Mr CAMBRIDGE I have been enabled to examine the full-grown English male specimen, captured by CAMBRIDGE, which BLACKWALL mentions (p. 15), as well as a female, also taken by CAMBRIDGE, which appears to be not fully developed (the abdomen in this specimen is wanting). By a comparison of these English specimens with the type-specimen, a ♂ *ad.*, of *A. anachoreta* AUSS., which Dr L. KOCH had the kindness to lend me, and with some specimens of *A. piceus* AUSS., among which are a full-grown male and two full-grown females, for which I have to thank Dr K. KOCH of Frankfurt on the Main, I have found that the above-mentioned *A. Sulzeri* BLACKW. belongs to *A. anachoreta* AUSS., whereas I cannot distinguish the English female specimen from the females of *A. piceus* AUSS. In order to show this, it will perhaps be necessary to give some account of the characteristics which I have found to belong to the males of *A. piceus* and *A. anachoreta*; — of the latter form this sex only it as yet known.

*A. piceus* ♂. The distance between the anterior centre eyes is clearly (though in my specimen not fully 1½ times) greater than their diameter; the distance between them and the anterior lateral eyes is almost equally great. The smaller diameter of the anterior lateral eyes is less, their greater diameter greater, than the diameter of the anterior centre eyes: the distances between the lateral eyes themselves, and between them and the posterior centre eyes, are very small, not so great as the minor axis of the posterior lateral eyes. The ce-

phalothorax is *smooth* and bright, only a little rugose towards the sides; from the middle-fovea a row of fine punctures extends to the eye-tubercle. From the outer side of the bulbus genitalis of the palpus, towards its apex, there issues a thin lamina directed forwards and somewhat outwards: this lamina is dilated at the free end, irregularly triangular, and *broader than it is long*; its broad, emarginated end is somewhat twisted, with the corners drawn out, and has one corner directed downwards and forwards, the other upwards and somewhat backwards. On the inner side of this lamina, and just at its base, there arises from the bulbus a long, fine, almost straight spine, pointing upwards and forwards. — The anterior metatarsi are also above provided with some few short spines.

*A. anachoreta* ♂. The distance between the anterior centre eyes is *not fully so great as the eye's diameter*, and the distance between them and the anterior lateral eyes even something less; *the major diameter of the anterior lateral eyes is less than that of the anterior centre eyes*; the distances between the lateral eyes themselves and between them and the posterior centre eyes are less than the shortest diameter of the eyes. The cephalothorax is everywhere, but especially at the margins of the pars thoracica, *coarsely and irregularly rugose*. The bulbus genitalis has a lamina and a spine at the apex, as in *A. piceus*; the lamina is broadest at the free end, narrow, *longer than it is broad*, turned outwards; its lower corner is more extended, the upper is broadly rounded off, hardly forming a little angle. The spine, which rises just before the base of the lamina, is slightly curved, and the lamina is at its broad free end bent almost into a half-circle towards or round the spine. — The fore metatarsi exhibit also above several conspicuous short spines.

The English male-specimen agrees in the points just detailed perfectly with the type-specimen of *A. anachoreta*: it only differs, as far as I can see, by its somewhat smaller size, and by a slight dissimilitude in the teeth on the inner edge of the claw-furrow of the mandibles, on which however no stress can be laid, as such differences are sometimes observed in the two mandibles of one and the same specimen.

In the *female* sent me by CAMBRIDGE I cannot discover any deviation of any consequence from *A. piceus* AUSS. The protuberance on which the anterior centre eyes are posited, is only a trifle higher than in my specimens of *A. piceus* ♀; but the relative sizes and distances

of the eyes are the same as in that species; the cephalothorax is smooth and shining, not rugose, etc.

That *A. anachoreta* really is a different species from *A. piceus*, having had so scanty materials to examine, I will not venture to affirm: it is very possible that intermediate forms may exist. No female with the characteristics that distinguish *A. anachoreta* has as yet been found. Dr VAN HASSELT has sent me sketches of the position of the eyes in two specimens, a ♂ *ad.* and ♀ *jun.*, of the *Atypus* which he had discovered in Holland <sup>1)</sup>, and according to these sketches the male belongs to *A. anachoreta*, but the female to *A. piceus*, just as is the case with the two English specimens that I have examined. On the other hand the rather considerable differences between the males of the two forms as regards the relative size and position of the eyes, the nature of the surface of the cephalothorax and the structure of the organs of copulation, seem to me to tend to the conclusion, that *A. anachoreta* really is a separate species. I ought however to mention that in the females of *A. piceus* I have found the size and position of the eyes somewhat variable: I have rarely, like AUSSERER, found the centre eyes separated by an interval as great as three times their radius, and sometimes the greater diameter of the anterior lateral eyes is not, as usual, longer than, but equal to, nay even a trifle shorter than the diameter of the centre eyes.

With respect to the synonyms of the species before us, it is probable that under the "*A. Sulzeri*" of some authors both *A. piceus* AUSS. and *A. anachoreta* ID. are confounded. But I cannot accept the conclusion of AUSSERER, that the south-German "variety" of "*A. Sulzeri*" figured by C. KOCH loc. cit., fig. 1548, is an *A. anachoreta*. The two centre eyes in that variety are said to be somewhat *farther apart* than in the specimens, which C. KOCH states that he had obtained from Switzerland, and which one would on that account more readily suppose to belong to *A. anachoreta*. — It is not possible from SULZER's figure and description to ascertain, which of the two forms he designated by the name *Ar. picea*: his specific name may however, for the present at least, be retained for the form, to which AUSSERER reserved the name *A. piceus*. *Oletera atypus* WALCK. belongs, judging from the figure given loc. cit. by WALCKENAER of

1) See VAN HASSELT's Note on the occurrence of *A. Sulzeri* and *Pholcus opilionoides* in Holland, in Verslag van de drie- en twintigste algem. Vergad. d. Nederl. Entom. Vereenig. (Tijdschrift v. Entom., XII (1869), p. 25).

the position and relative sizes of the eyes, to *A. piceus* AUSS., and this is probably also the case with *A. Sulzeri* LATR. and DUF., and with *Olet. picea* LUCAS. *A. affinis* EICHW. <sup>1)</sup> on the contrary, which EICHWALD already in 1830 described as a different species from "*A. Sulzeri*", seems to me, on the strength of the expression, "*oculi duo intermedii maximi... tres alii minores*", to be identical with *A. anachoreta*, and I have therefore accepted the appellation *A. affinis* EICHW. for this last-mentioned form.

(Pag. 33.) *Lycosa latitans* [= *Pirata latitans* (BLACKW.) 1841].

Syn.: 1841. *LYCOSA LATITANS* BLACKW., The differ. in the number of eyes, *cet.*, in Transact. of the Linn. Soc., XVIII, p. 612.

1848. " (POTAMIA) PALUSTRIS C. KOCH, Die Arachn., XV, p. 4, Tab. DV, figg. 1415, 1416.

1872. *PIRATA LATITANS* THOR., Rem. on Syn., p. 345.

On this spider see above, loc. cit.

(Pag. 36.) *Lycosa piscatoria* [= *Pirata hygrophilus* THOR. 1872].

Syn.: †1857. *LYCOSA PISCATORIA* BLACKW., Supplem. to a Catal., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XX, p. 498.

†1861. " *ULIGINOSA* WESTR., Aran. Suec., p. 533 (*ad part.: forma princip.*).

1867. *POTAMIA PISCATORIA* OHL., Aran. d. Prov. Preuss., p. 132.

1872. *PIRATA HYGROPHILUS* THOR., Rem. on Syn., p. 343.

On this species and on *L. (P.) piscatoria* C. KOCH or *Pirata Knorrii* (SCOP.) N., see above, l. c.; on *Ar. piscatorius* CLERCK, see p. 339.

1) "*A. affinis*, m., tab. II, fig. 19, rufescens, pedibus lucidius fuscis, mandibulæ validissimæ, longissimo ungue, longitudinem mandibulæ tenente, tenui, rufo, oculi duo intermedii maximi eminentiæ infixi, iisque a latere adpositi tres alii minores, triangulum constituentibus, intermediis posticis cum extremis minimis. Hab. Volhyniam, prope Kremenez. Maxillæ mandibulis multo minores, ad basin earum sitæ, medio in duplicem appendicem ciliatam elongatæ, ab exteriori latere palpigeræ; palpi 5 articulati, pediformes, ciliatæ. Mandibulæ et ipsæ ciliatæ, longitudinali fovea ad recipiendum unguem exaratae denticulisque ad foveam per binas series dispositis, instructæ. Labium non quadratum, sed antice attenuatum, cuneatum, inter appendicem maxillarum duplicem ciliatam insertum, minimum, cum thoracis parte inferiore conjunctum; pedibus omnibus, duobus præsertim tarsi articulis extremis ciliatis, anticis et posticis longissimis, tertii brevissimi". — EICHWALD, loc. cit., p. 73. — In the accompanying figure the eyes more resemble those of "*A. piceus*" than of "*A. anachoreta*".

(Pag. 43.) **Sphasus lineatus** [= *Oxyopes lineatus* LATR. 1806].

- Syn.*: 1806. OXYOPES LINEATUS LATR., Gen. Crust. et Ins., I, p. 117, Tab. V, fig. 5.  
 1825. SPHASUS " WALCK., Faune Franç., Arachn., p. 37.  
 ?1827. " ALEXANDRINUS SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd.,  
 XXII, p. 361, Arachn., Pl. IV, fig. 1.  
 1836. " LINEATUS C. KOCH, Die Arachn., III, p. 12, Tab. LXXVII,  
 figg. 171, 172.  
 1866. OXYOPES " SIM., Sur quelques Araignées d'Espagne, in Ann.  
 de la Soc. Ent. de France, 4 Sér., VI, p. 289.  
 ?1866. " VARIEGATUS ID., ibid., p. 290.

As regards the synonyms and principal characteristics of this species, vid. supr., pp. 350—354, under *S. lineatus* WESTR. (*S. variegatus* C. KOCH, *O. ramosus* (PANZ.), N.).

(Pag. 46.) **Eresus cinnabarinus** [= *Eresus cinnabarinus* (OLIV.) 1789].

- Syn.*: 1789. ARANEA CINNABARINA OLIV., Encycl. Méth., IV, p. 221.  
 1789. " MONILIGERA VILL., Linn. Ent., IV, p. 128; Nomencl. Ic.,  
 Tab. XI, fig. 8.  
 1790. ARANEA QUATTUOR-GUTTATA ROSSI, Fauna Etr., II, p. 135, Tab. I,  
 figg. VIII, IX.  
 1802. " CINNABERINA WALCK., Faune Par., II, p. 249.  
 1804. " QUADRI-GUTTATA COQUEB., Illustr. icon. Ins., I, 3, p. 122,  
 Pl. 27, fig. 12 (sec. WALCK.).  
 1805. ERESUS CINNABERINUS WALCK., Tabl. d. Aran., p. 21, Pl. III, figg. 25, 26.  
 182.. " CINNABERINUS HAHN, Monogr. Aran., 2, Tab. 2, figg. A, a.  
 1831. " QUATTUOR-GUTTATUS ID., Die Arachn., I, p. 45, Tab. XII,  
 fig. 35.  
 1837. " 4-GUTTATUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 35.  
 1838. " " ID., Die Arachn., IV, p. 104, Tab. CXXXVIII,  
 fig. 316.  
 1838. " ILLUSTRIS ID., ibid., p. 105, Tab. CXXXVIII, fig. 317.  
 1838. " CINNABERINUS ID., ibid., p. 106, Tab. CXXXVIII, fig. 318.  
 1850. ERYTHROPHORUS 4-GUTTATUS ID., Uebers. d. Arachn.-Syst., 5, p. 71.  
 1850. " ILLUSTRIS ID., ibid.  
 1850. " CINNABERINUS ID., ibid.

Var.  $\beta$ , *purpurata*:

- Syn.*: 1804. ARANEA PURPURATA PANZ., Syst. Nomencl., p. 47 (SCHAEFF., Ic. Ins.  
 Ratisb., I, Tab. XXXII, fig. xx).  
 182.. ERESUS ANNULATUS HAHN, Monogr. Aran., 2, Tab. 2, figg. B, b.  
 1831. " " ID., Die Arachn., I, p. 47, Tab. XII, fig. 36.  
 1848. " " C. KOCH, ibid., XIII, p. 14, Tab. CCCXXXV,  
 figg. 1087.  
 1850. ERYTHROPHORUS ANNULATUS ID., Uebers. d. Arachn.-Syst., 5, p. 71.

Of this species I possess only 4 specimens, all males, from Austria; they vary in length from 7 to 9 millim. In one of these specimens are *three* pairs of black spots on the back of the abdomen, in the others the two hindermost, smaller spots are wanting, so that the abdomen has only *two* pair of spots; these four large spots are surrounded by a white ring, even in the specimen that has three pair of spots; but the ring is not very distinct in one of the three specimens with but four spots. The red margins of the cephalothorax are in all the specimens rather narrow, as in C. KOCH's figures of *E. illustris* and *E. cinnabarinus*; the four anterior legs are black, with a little ring of white hair at the apices of the thighs, patellæ and tibiæ; the thighs of the second pair are above, towards the base, more or less deeply red-haired: the four posterior legs are red or reddish black, their thighs for the most part red, their patellæ red-haired above, at least at the apex; these legs have also at the extreme end of the patella, tibia and metatarsus an extremely narrow broken ring or spot of white hair.

To me it appears certain, that C. KOCH's *E. cinnabarinus*, *4-guttatus* and *illustris* belong to one and the same species, and *Ar. purpurata* PANZ. or *E. annulatus* HAHN is probably nothing but a variety of the same. No certain difference of *form* between *E. cinnabarinus* and *E. annulatus* has ever been shown to exist, for the differences in the position of the eyes and in the length of the legs which C. KOCH mentions (loc. cit., XIV, p. 14), VAN HASSELT <sup>1</sup>) — although he nevertheless considers *E. annulatus* as a separate species — has not been able to confirm. The difference in the number of the black abdominal spots, and the presence or absence of a white ring round them, offer, as we have just seen, no satisfactory criterion for distinguishing the forms in question; the only difference appears to lie in the colour of the posterior legs, which in "*E. cinnabarinus*" are more or less reddish throughout their whole length, but in "*E. annulatus*" are said to be black, without any shade of red. *E. illustris* however appears to constitute a transition-form, for in this spider the thighs of the posterior legs are stated to be red, while the remaining joints are black. — Should *E. annulatus* really prove to be an independent species, its proper name will be *E. purpuratus* (PANZ.) 1804.

Probably *Aranea nigra* PET. 1787 (= *Eresus ater* WALCK. 1805, *Chersis dubius* ID. 1837)<sup>2</sup>) is nothing but an *E. cinnabarinus*; but as

1) Over d. *Eresus annulatus* HAHN (Tijdschr. v. Entom., XV, (1872)), p. 4.

2) PETAGNA, Specim. Ins. Ulter. Calabr., p. 34; WALCK., Tabl. d. Aran., p. 21; ID., H. N. d. Ins. Apt., I, p. 392.

PETAGNA does not mention any black spots on the red abdomen, I do not consider that I ought to accept the uncertain and inappropriate name *niger* for the species, and I therefore preserve the ordinary appellation *cinnabarinus*.

*E. puniceus* C. KOCH<sup>1)</sup>, which is said to be 6½ lines long, and is therefore considerably larger than *E. cinnabarinus*, is probably a separate species, and identical with *E. Audouinii* [Audouin] BRULLÉ 1832<sup>2)</sup>, which WALCKENAER (Ins. Apt., I, p. 395) refers to *E. cinnabarinus*. *E. Audouinii* is stated to be 13 millim. long, and to have the whole pars thoracica red (as is also the case with *E. puniceus*, according to C. KOCH); the legs are black, with white apices to the joints, the hindmost pair having a shade of red; the three posterior pairs have a white line along the upper part. The abdomen has sometimes 4, sometimes 6 black spots.

(Pag. 51.) \**Salticus xanthogramma* [= *Attus* (?) *inc. spec.*].

Since, as far as I am aware, *Attus xanthogramma* WALCK. 1825, which is probably the female to *A. bicolor* WALCK. 1802 (Conf. SIM., Révis. d. Attidæ, p. 138 (14)), has, at least since LISTER's time, never been found in England, and LISTER's short description of his "*Til. XXXIII*"<sup>3)</sup> does not enable me to aggregate this spider either to *A. xanthogramma*, to which it is referred by BLACKWALL, or to any other species with which I am acquainted, it appears to me most prudent to leave LISTER's spider for the present undetermined, and to defer distinguishing it by any name till it shall have been rediscovered in England.

(Pag. 55.) *Salticus floricola* [= *Yllenus saltator* (SIM.) 1869].

Syn.: †1862. *SALTICUS FLORICOLA* CAMBR., List of new and rare Spid., *cet.*, in Zoologist, 1862, p. 7945.

1869. *ATTUS SALTATOR* SIM., Monogr. d. Attides, p. 611 (145).

1871. *SALTICUS SALTATOR* CAMBR., Descr. of some Brit. Spid., *cet.*, in Transact. of the Linn. Soc., XXVII, p. 401.

As I have already (p. 392) stated, this species is quite different from *Attus* or *Euophrys floricola* C. KOCH, which is cited by BLACK-

1) Die Arachn., IV, p. 102, Tab. CXXXVIII, fig. 315.

2) Expéd. scient. de Morée, Anim. Artic., p. 56, Pl. XXVIII, fig. 10.

3) LISTER, Hist. Anim. Angliæ tres tract., p. 90.



WALL. It is considerably smaller than *A. floricola*, only about 3 or 3½ millim. long, with the 4:th pair of legs very long; the greater part of the male's palpi is yellowish, the upper side of all the joints being white-haired; the tibial joint appears to be destitute of the pointed process, into which the apex of the outer side of that joint is drawn out in the true *A. floricola* ♂. — Mr CAMBRIDGE has favoured me with a ♂ *ad.* and ♀ *jun.* of this little spider, which is rather an *Yllenus* than an *Attus* sensu strict.

(Pag. 59.) \***Salticus promptus** [= *Euophrys prompta* (BLACKW.) 1854].

- Syn.*: 1854. SALTICUS PROMPTUS BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XIII, p. 173.  
 1868. ATTUS FRONTALIS "Jeune" SIM., Monogr. d. Attides, p. 598 (132).  
 1872. " PROMPTUS ID., Révis. d. Attidæ, p. 213 (89).

(Pag. 61.) \***Salticus Jenynsii** [= *Marpessa* (?) *Jenynsii* (BLACKW.) 1854].

- Syn.*: 1854. SALTICUS JENYNSII BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XIII, p. 174.

Mr BLACKWALL, to whom I had sent a male and a female specimen of *Attus radiatus* GRUBE (*Marpessa radiata* N., *Attus strigipes* WESTR.: vid. sup., p. 368), which species I supposed to be identical with *S. Jenynsii* BLACKW., has had the kindness to inform me that "*A. radiatus* GRUBE is certainly not identical with *S. Jenynsii*."

(Pag. 62.) \***Salticus Blackwallii** [= *Marpessa Blackwallii* (CLARK) 1855].

- Syn.*: 1855. SALTICUS BLACKWALLII CLARK, Notice and Descr. of a new spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XVI, p. 329.  
 1868. MARPISSUS BLACKWALLII SIM., Monogr. d. Attides, p. 24 (14).

SIMON appears to think that this to me unknown spider is not a native of England, but imported from abroad and *exotic*: Conf. SIM., loc. cit., the foot-note.

(Pag. 70.) **Thomisus audax** [= *Xysticus pini* (HAHN) 1831].

- Syn.: 1831. THOMISUS PINI HAHN, Die Arachn., I, p. 26, Tab. VIII, fig. 23.  
 1831. " " ID., Monogr. Aran., 6, Tab. 2, fig. C.  
 1835. XYSTICUS MORDAX C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 130,  
 19, 20 (sec. Uebers. d. Arachn.-Syst., 1).  
 ?1835. " AUDAX ID., ibid., 129, 16, 17 (*ad part.*).  
 ?1837. " CINEREUS ID., Uebers. d. Arachn.-Syst., 1, p. 26.  
 ?1838. " " ID., Die Arachn., IV, p. 63, Tab. CXXVI, fig. 290.  
 1845. " AUDAX ID., ibid., XII, p. 74, Tab. CCCXIII (*ad part.*),  
 figg. 1007, 1008.  
 1851. THOMISUS PINI WESTR., Förteckn., cet., in Göteborgs Vet.- o. Vitt.-  
 Samhälles Handl., Ny Tidsföljd, 2, p. 50.  
 1856. XYSTICUS PINI THOR., Rec. crit. Aran., in Nov. Act. Reg. Soc.  
 Scient. Ups., Ser. 3, II, p. 111.  
 1861. THOMISUS CRISTATUS WESTR., Aran. Suec., p. 418 (♂ *ad part.*).  
 1861. " CINEREUS ID., ibid., p. 424 (= ♀).  
 1872. XYSTICUS CRISTATUS Var. *pini* THOR., Rem. on Syn., p. 236.

Contrary to what I had formerly supposed (vid. sup., p. 236 et seq.), BLACKWALL'S *Thom. audax* or *Xyst. pini* HAHN appears to be specifically different from my *X. cristatus* Var.  $\alpha$ , or *Thom. cristatus* BLACKW.: the Rev. Mr CAMBRIDGE has pointed out to me a little difference in the form of the anterior anchor-shaped process under the bulbus genitalis in the males of these two forms, and this difference, which appears to be constant, has, in conjunction with their somewhat different colour, induced me now to take them up as separate species. In *X. cristatus* in fact, the outward-pointing, tooth-like branch of this said process is situated clearly *something above* the inward-pointing branch, which moreover is considerably longer than the other branch; whereas in *X. pini* the two arms or branches both proceed from the same point, just opposite to each other, and the inner is scarcely longer than the outer, wherefore the whole process is more like a I or an anchor than in the typical *X. cristatus*. — The females of the two species can probably only be distinguished from each other by a slight difference in their colour, and particularly by the different form of the wedge-shaped dark patch on the pars cephalica (vid. sup., p. 239).

In determining C. KOCH'S *X. viaticus* and *X. audax*, I have, as has already (p. 236) been mentioned, followed Dr L. KOCH: the specimens of "*X. audax* C. KOCH", with which that gentleman has kindly obliged me, include both sexes of both *X. cristatus* and *X. pini*. As moreover OHLERT has described *X. cristatus* under the name of *X.*

*audax* C. KOCH, it appears to me that there is no sufficient reason for applying the very uncertain trivial name *audax* (derived from SCHRANCK) either to any of the species (*Thom. luctuosus* BLACKW., *Th. calcaratus* WESTR. ♀?), which are included under WESTRING'S *Th. audax*, or to *Th. audax* BLACKW., which is certainly the same as *Thom. pini* HAHN. WESTRING has described *females* of this species under the name of "*Thom. cinereus* (C. KOCH)". The *male* of the same species he has united with the male of *X. cristatus* under his *Thom. cristatus* ♂. *X. cinereus* C. KOCH is however a very uncertain species, about which there is much difference of opinion: by BLACKWALL it is aggregated to an entirely different, to me unknown spider (*Thom. cinereus* BLACKW.), and it is not either considered by L. KOCH to be identical with WESTRING'S *Th. cinereus* (vid. sup., p. 237, note). Accordingly there seems to me every reason to designate this last species by the specific name *pini* HAHN, which is older than *cinereus*, and, as far as I am aware, has never been used for any other species than that in question. — *X. mordax* C. KOCH is, according to C. KOCH himself, identical with *Th. pini* HAHN; it is only through a slip of the pen that that synonym was adduced by me under "*X. cristatus* Var. α". As regards *X. viaticus* C. KOCH (*X. Kochii* THOR.), which BLACKWALL, WESTRING and others erroneously refer to *X. cristatus*, vid. sup., p. 236, 241.

(Pag. 81.) \***Thomisus Cambridgii** [= **Xysticus Cambridgii** (BLACKW.) 1858].

*Syn.*: 1858. THOMISUS CAMBRIDGII BLACKW., Descr. of six newly disc. spec., *et.*, in Ann. and Mag. of Nat. Hist., 3 Ser., I, p. 426 (= ♀).

The spider which CAMBRIDGE<sup>1)</sup> has described and figured under the name of *Th. Cambridgii* ♂, is identical with *Xyst. impavidus* THOR. (see above, p. 230), and is therefore the male to *Th. lanio* WESTR.; whether it also is the male to *Th. Cambridgii* BLACKW., I hope to be able to state farther on, in the "*Additions*". — On *Th. Cambridgii* see also above, p. 243.

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1) Descr. of some Brit. Spid. *etc.*, in Transact. of the Linn. Soc., XXVII, p. 406, Pl. 54, No. 9, a, e, f, g.

(Pag. 82.) **Thomisus pallidus** [= **Xysticus horticola** C. KOCH 1837].

- Syn.*: 1837. **XYSTICUS HORTICOLA** C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 26.  
 1838. " " ID., Die Arachn., IV. p. 74 (*ad part.: forma princip.*), Tab. CXXIX, figg. 296—298.  
 1846. **THOMISUS PALLIDUS** BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., XVIII, p. 299 (= ♀).  
 1861. " **HORTICOLA** WESTR., Aran. Suec., p. 436.  
 1871. " **PALLIDUS** CAMBR., Descr. of some Brit. Spid., *cet.*, p. 408, Pl. 54, No. 10 (= ♂).  
 1872. **XYSTICUS HORTICOLA** THOR., Rem. on Syn., p. 252.

The description and figures of the male *Th. pallidus* given by CAMBRIDGE, loc. cit., prove that this species is identical with *Th. horticola* WESTR. or the chief form of *Xyst. horticola* C. KOCH, as has also been acknowledged by CAMBRIDGE, to whom I have sent an adult male of *Th. horticola* WESTR. On this latter, and on its differences from *X. atomarius* (PANZ.) or "*X. horticola* Var." C. KOCH (*Th. versutus* BLACKW.), vid. sup., pp. 252—254.

(Pag. 83.) **Thomisus versutus** [= **Xysticus atomarius** (PANZ.) 1801].

- Syn.*: ?1861. **THOMISUS ATOMARIUS** BLACKW., Spid. of Gr. Brit., I, p. 74, Pl. IV, fig. 42.  
 1872. **XYSTICUS** " THOR., Rem. on Syn., p. 252.  
*Cet. Syn. vid. sup., loc. cit.*

English specimens of "*Th. versutus* BLACKW.", a ♂ and ♀ *ad.*, communicated to me by the Rev. O. P.-CAMBRIDGE, perfectly agree with German, Swedish and other specimens of *Xyst. atomarius* (PANZ.), THOR. BLACKWALL's figure of the *female* of *Th. versutus* is however rather unlike the female specimens that I have seen, and which as regards the marking of the abdomen closely resemble the male. — On *X. atomarius* and its synonyms etc., see more above, loc. cit.

(Pag. 86.) **Thomisus incertus** [= **Xysticus praticola** C. KOCH 1837].

- Syn.*: 1837. **XYSTICUS PRATICOLA** C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 26.  
 1838. " " ID., Die Arachn., IV, p. 77, Tab. CXXX, figg. 300, 301.  
 1846. **THOMISUS INCERTUS** BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., XVIII, p. 297.  
 1866. " **BREVIPIES** WESTR., Aran. Suec., p. 438 (♀ *alt. ad part.; non ♂*)

1867. *XYSTICUS PRATICOLA* OHL., Aran. d. Prov. Preuss., p. 117 (♀ *salt. ad part.; non ♂*).  
 1872. "THOMISUS INCERTUS" THOR., Rem. on Syn., p. 255 (= ♂).  
 1872. *XYSTICUS BREVIPES* ID., *ibid.* (♀ *salt. ad part.; non ♂*.)

*X. praticola* C. KOCH is identical with *Thom. incertus* BLACKW. and different as well from *Thom. brevipes* WESTR., as from *Th. brevipes* HAHN, which are two species perfectly distinct and separate from each other: see the "Additions and Corrections" to p. 254, at the end of this volume, where also some of the most important differences between *X. praticola* and a couple of other species closely allied to it are enumerated; see also above pp. 255, 256. — A full-grown male *X. praticola* or *incertus* has been found in the island of South-Koster (Bohuslän) by Mr A. STUXBERG; females, which in the foregoing remarks I have aggregated to "*X. brevipes* (WESTR.)", but which I am not able to distinguish from females of "*X. praticola*" and "*Th. incertus*", kindly sent me by L. KOCH and CAMBRIDGE, I have met with in several parts both of Sweden and Germany; a couple of similar females I have also received from OHLERT, as belonging to his *X. praticola*, of which the male is identical with WESTRING'S *Th. brevipes* ♂ (*X. Westringii* N.) — *Thom. brevipes* BLACKW. (Spid. of Gr. Brit., I, p. 67, Pl. IV, fig. 37) is a very uncertain species: Mr CAMBRIDGE tells me he suspects that it is founded on young individuals of *Th. luctuosus* BLACKW. At all events it must be expunged from the synonyms of *Th. brevipes* WESTR., a spider not as yet observed in England.

(Pag. 90.) *Thomisus abbreviatus* [= *Thomisus onustus* WALCK. 1805].

- Syn.*: 1805. *THOMISUS ONUSTUS* WALCK., Tabl. d. Aran., p. 32.  
 1807. " " ID., H. N. d. Aran., 3, 7.  
 1825. " " ID., Faune Franç., Arachn., p. 77.  
 1825. " *ABBREVIATUS* ID., *ibid.*, p. 76.  
 1827. " *PÉRONII* Var. SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., p. 396, Arachn., Pl. VI, fig. 8.  
 1831. " *DIADEMA* HAHN, Die Arachn., I, p. 49, Tab. XIII, fig. 37.  
 ?1831. " *CRISTATUS* ID., Monogr. Aran., 6, Tab. 1, figg. C, c, 2.  
 1838. " *DIADEMA* C. KOCH, Die Arachn., IV, p. 51, Tab. CXXIII, figg. 281, 282.

That *Thom. onustus* WALCK. is the same species as his *Th. abbreviatus*, cannot, I think, be doubted by any one who has seen a considerable number of specimens of this spider. "*Th. onustus*" is

the female just *before*, "*Th. abbreviatus*", *after*, oviposition. In H. N. d. Aranéides, WALCKENAER says of *Th. onustus*: "abdomine orbiculato-trigono, postice latiore, bituberculato" . . . . "L'abdomen est jaune, court, *très-large à sa partie postérieure*, qui est arrondie et a en-dessus deux tubercules"; and in Tabl. d. Aran. the description of the form of the abdomen is couched in the same words. (The *figure* in H. N. d. Aran. is miserable). Compare also the characteristics of WALCKENAER'S "2° Race, *les Trapézoides*", in Ins. Apt., I, p. 517. That the anterior side-eyes in *Th. onustus* are *larger* than the others, is nowhere stated in any of WALCKENAER'S earlier works, and his clas-sing, in Ins. Apt., loc. cit., *Th. onustus* among "*les Trapézoides*", which are said to be distinguished by that characteristic, was without a doubt caused by his believing *Th. Péronii* SAV. et AUD. (which must not be confounded with the "*Th. Péronii*, Var.", that we have cited in the Synonyms!) to be identical with *Th. onustus*: in SAVIGNY'S figure in fact the anterior lateral eyes of this *Th. Péronii* are slightly larger than the other eyes.

LEPECHIN <sup>1)</sup> has described a white crab-spider, which he found in Siberia under the bark of trees, and which WALCKENAER adduces under his *Th. onustus*. Whether this spider, to which GMELIN <sup>2)</sup> in 1788 gave the name of *Aranea alba*, really belong to *Th. onustus*, appears to me very uncertain, and I have therefore not accepted the name "*albus*" for the species before us.

(Pag. 97.) \***Philodromus variatus** [= ***Philodromus variatus*** BLACKW. 1837].

Syn.: 1837. PHILODROMUS VARIATUS BLACKW., Charact. of a new gen., *cet.*, in Lond. and Edinb. Phil. Mag., 3 Ser., X, p. 102.

Thinking it probable, that *Philodr. auro-nitens* AUSS. or *Ph. cepiticolis* WESTR. (see above, p. 266) might be identical with *Ph. variatus* BLACKW., I had sent a fullgrown male and female of the former species to Mr BLACKWALL, asking for his opinion on it: he now informs me, that "*Ph. auro-nitens* appears to be distinct from *Ph. variatus*", and I have therefore thought it safest to register these two forms as separate species.

1) Tagebuch der Reise etc., I, p. 245, Tab. XX, fig. 1.

2) LINNÆI Syst. Nat., Ed. 13, I, Pars V, p. 2961.

(Pag. 105.) **Drassus lucifugus** [= *Gnaphosa lucifuga* (WALCK.) 1802  
+ *Gnaphosa anglica* (CAMBR.) 1871].

*G. lucifuga*:

*Syn.*: 1861. PYTHONISSA LUCIFUGA WESTR., Aran. Suec., p. 350.

*Cet. Syn. vid. sup.*, p. 187.

*G. anglica*:

1871. DRASSUS ANGLICUS CAMBR., Descr. of some Brit. Spid., *cet.*, p. 410,  
Pl. 54, No. 12.

BLACKWALL'S description evidently belongs to the true *D. lucifugus* WALCK., and seems, as well as the figure, to be chiefly taken from C. KOCH'S description and figure of this author's *Pythonissa lucifuga* ♀ (Conf. CAMBR., loc. cit.); at least the description has not been made from English specimens. The female found by CAMBRIDGE at Blandford in Dorsetshire, which BLACKWALL mentions and refers to *D. lucifugus*, and on which BLACKWALL'S figure is in part founded, is a totally different though closely allied species, which CAMBRIDGE has loc. cit. described under the name of *D. anglicus*, and of which he has kindly favoured me with a ♂ and ♀ *ad.* In colour this *Gnaphosa anglica* resembles *G. muscorum* (L. KOCH), concerning which see above, p. 190; the cephalothorax, which is surrounded by a fine border, not by a hem ("Umschlag": L. KOCH), and the legs are reddish or yellowish brown; the cephalothorax has a fine black lateral border (at least in the male), and a darker ∨ on the pars cephalica, behind; the abdomen is greyish or blackish brown. The distance of the anterior lateral eyes from the edge of the clypeus is about one and a half times, *not double*, the diameter of those eyes, which are not much larger than the anterior centre eyes. *There is no spine under the tibiæ of the fore-legs* hereby the species is immediately distinguished from *G. muscorum*, *G. lucifuga* and *G. montana* L. KOCH (as regards this last, *vid. sup.*, p. 188 et seq.). In the female that I have seen, the cephalothorax is  $3\frac{1}{4}$ , the 1:st pair of legs 7, and the 4:th  $8\frac{1}{2}$  millim., the patella + tibia of the 4:th pair  $2\frac{1}{2}$  millim.; in the ♂ the patella + tibia of this pair are as long as the cephalothorax. The male's bulbus is destitute of the S-shaped hook at the extremity of the bulbus, which distinguishes *G. muscorum* ♂; the tibial joint's outer side is drawn out into a strong, straight, pointed spur, directed forwards and as long as the joint itself. The vulva is a very large area with almost parallel sides,

which is in a great measure occupied by a Y-shaped fovea, the two anterior arms of which are separated by a broad, thick, almost semi-circular, backward-pointing continuation of the fovea's anterior border.

Whether the real "*Dr. lucifugus* WALCK." be met with in England, is as yet uncertain. — *Filistata femoralis* REUSS, which BLACKWALL cites, is a species separate from both *G. lucifuga* and *G. anglica*, and is undoubtedly identical with *G. bicolor* (HAHN). On this subject see above, p. 191.

(Pag. 108.) **Drassus pumilus** [= *Prosthesima electa* (C. KOCH) 1839].

Syn.: 1839. MELANOPHORA ELECTA C. KOCH, Die Arachn., VI, p. 83, Tab. CC, fig. 490.

1866. " BICOLOR L. KOCH, Die Arachn.-fam. d. Drass., p. 151, Tab. VI, fig. 93—95.

1871. DRASSUS ELECTUS CAMBR., Descr. of some Brit. Spid., *et.*, p. 413.

According to CAMBRIDGE loc. cit., this species is not the same as *M. pumila* C. KOCH, cited by BLACKWALL, but is identical with *M. electa* C. KOCH, of which he has received specimens from L. KOCH. — My specimens of *M. electa* (for which I am indebted to v. KEMPELEN) are from Austria. — Respecting *Drassus bicolor* HAHN, taken up under this species by L. KOCH, see above p. 192.

L. KOCH <sup>1)</sup> has lately shown, that MEIGEN <sup>2)</sup> as early as 1803 (not first in 1838, as most arachnologists probably suppose) gave the name *Melanophora* to a genus of *Diptera*; and accordingly, as *Melanophora* MEIG. has priority before *Melanophora* C. KOCH, L. KOCH has very properly given the last-mentioned genus a new name, *Prosthesima* L. KOCH 1872.

(Pag. 111.) **Drassus sericeus** [= *Drassus Blackwallii* THOR. 1871].

Syn.: †1843. DRASSUS SERICEUS BLACKW., A Catal., *et.*, in Transact. of the Linn. Soc., XIX, p. 113 (*sec.* Spid. of Gr. Brit.).

1871. " BLACKWALLII THOR., Rem. on Syn., p. 179.

The specimens of *D. sericeus* BLACKW. sent me by CAMBRIDGE do not belong to the real *D. sericeus* or *D. 4-punctatus* (LINN.), of which

1) Apterologisches aus dem Fränkischen Jura, p. 139.

2) Versuch einer neuen Gattungs-Eintheilung d. europ. zweiflüg. Insekten, in ILLIGER's Magazin, II, p. 279.



vid. sup., p. 176: I have therefore, loc. cit., bestowed upon *D. sericeus* BLACKW., CAMBR. a new appellation, *D. Blackwallii*, and have indicated some of its chief distinctive marks. It appears to me however not improbable, that BLACKWALL had before him specimens of the right "*D. sericeus*" also, which, as has been remarked above, p. 178, the long and coarse process on the tibial joint of the palpus in BLACKWALL's figure appears rather to indicate.

(Pag. 122.) **Clubiona holosericea** [= *Clubiona grisea* L. KOCH 1866].

Syn.: †1851. CLUBIONA HOLOSERICEA BLACKW., A Catal., cet., in Ann. and Mag. of Nat. Hist., 2 Ser., VIII, p. 42 (sec. Spid. of Gr. Brit.).

1866. " GRISEA L. KOCH, Die Arachn.-fam. d. Drass., p. 319, Taf. XIII, figg. 205—207.

1872. " " THOR., Rem. on Syn., p. 220.

On this species, and on the *C. holosericea* of other authors, see above, p. 217—221.

(Pag. 130.) **Clubiona pallens** [= *Clubiona subtilis* L. KOCH 1866].

Syn.: †1854. CLUBIONA PALLENS BLACKW., Supplem. to a Catal., cet., in Ann. and Mag. of Nat. Hist., 2 Ser., XIV, p. 30 (sec. Spid. of Gr. Brit.).

1866. " SUBTILIS L. KOCH, Die Arachn.-fam. d. Drass., p. 351, Tab. XIV, figg. 229—231.

1871. " " CAMBR., Descr. of some Brit. Spid., cet., p. 414.

1871. " MINUTULA THOR., Rem. on Syn., p. 227.

By comparing original specimens of *C. subtilis*, communicated by Dr L. KOCH, with examples of "*C. pallens* BLACKW." newly received from Mr CAMBRIDGE, I have found confirmation of the opinion expressed by CAMBRIDGE l. c., that these two species are identical. The apex of the tibial joint of the palpus in ♂ is on the outer side drawn out into a thin, triangular, pointed, long tooth, and thus BLACKWALL's description exactly suits these specimens. The male specimen which I had previously received from CAMBRIDGE, and which I loc. cit. had called *C. minutula*, is, as far as regards the tibial joint, a monstrous form of *C. subtilis*, the process of that joint on one of the palpi being considerably shorter than in the normal specimens, not slender and triangularly drawn out, but broad and blunt; it has at its apex two

small oblong depressions. The process on the other palpus has the form usual in *C. subtilis* ♂, and is only a little shorter. — As regards the right *C. pallens* (HAHN), L. KOCH, see above, p. 226.

(Pag. 132.) **Clubiona domestica** [= ***Liocranum domesticum*** (REUSS) 1834].

- Syn.*: †1834. TEGENARIA NOTATA C. KOCH, in HERR-SCHÄFF., Deutschl. Ins., 125, 14, 15 (sec. Die Arachn.).  
 1834. CLUBIONA DOMESTICA REUSS, Zool. Misc., Arachn., in Mus. Senckenb., I, p. 208 (214), Pl. XIV, fig. 9.  
 1841. PHILOICA NOTATA C. KOCH, Die Arachn., VIII, p. 55, Tab. CCLXVIII, figg. 631, 632.  
 1870. LIOCRANUM DOMESTICUM THOR., On Europ. Spid., p. 143.

*Aranea notata* LINN. (Syst. Nat., Ed. 10, I, p. 621) and *Ar. notata* O. FABR. (Fauna Grœnl., p. 226), taken up under this species by C. KOCH, by no means belong to it: the first is the same as *Theridium sisyphium* (CLERCK), concerning which see above, p. 86 (where it is by mistake stated, that *A. notata* LINN. had been by C. KOCH referred to *Agræca brunnea* (BLACKW.) or *Philoica linotina* C. KOCH, instead of *Liocranum domesticum* (REUSS) or *Phil. notata* C. KOCH). *Ar. notata* O. FABR. is a spider probably only met with in Greenland. — WALCKENAER, as BLACKWALL remarks, erroneously takes up *C. domestica* REUSS under his *C. corticalis* (Ins. Apt., IV, p. 439): vid. sup., p. 225. — *Liocr. domesticum* is also found in Sweden: vid. THOR., On Eur. Spid., p. 143.

(Pag. 135.) \***Clubiona erratica** [= ***Chiracanthium fasciatum*** N.].

- Syn.*: †1843. CLUBIONA ERRATICA BLACKW., A Catal., cet., in Transact. of the Linn. Soc., XIX, p. 115 (sec. Spid. of Gr. Brit.).

It is in the highest degree improbable that the spider here described by BLACKWALL is the same as *Clubiona erratica* WALCK. (*Chiracanthium carnifex* C. KOCH, *Ch. erraticum* WESTR.), among the synonyms of which I had above, p. 210, though with much hesitation, included it. The differences in the marking of the abdomen, and in the form of the process on the tibial joint of the palpus in ♂, which, according to BLACKWALL's description and figures, distinguish this English species from the true *Ch. carnifex* or *erraticum*, and to which

I loc. cit. called attention, appear to show, that BLACKWALL's spider is an entirely separate species; and from a communication in a letter I have lately received from the Rev. O. P.- CAMBRIDGE, I learn that this arachnologist is inclined to take the same view. Wherefore, as the species seems to require to be distinguished by a new name, I have called it *Ch. fasciatum*.

(Pag. 141.) **Ciniflo similis** [= *Amaurobius similis* (BLACKW.) 1861].

Syn.: †1843. CINIFLO FEROX BLACKW., A Catal., *cet.*, in Transact. of the Linn. Soc., XIX, p. 116 (*sec.* Spid. of Gr. Brit.).

1868. AMAUROBIUS SIMILIS L. KOCH, Die Arachn.-gatt. Amaurob., Cælothes u. Cybæus, in Abhandl. d. Naturhist. Gesellschaft in Nürnberg, 1868, p. 14, figg. 5, 6.

1871. „ „ THOR., Rem. on Syn., p. 206.

Regarding this species, of which CAMBRIDGE obligingly favoured me with specimens, vid. sup., loc. cit.

(Pag. 145.) **Ciniflo humilis** [= *Lethia humilis* (BLACKW.) 1855].

Syn.: 1855. CINIFLO HUMILIS BLACKW., Descr. of two newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XVI, p. 120.

1869. LETHIA VARIA MENGE, Preuss. Spinn., III, p. 249, Pl. 47, tab. 145.

1870. „ HUMILIS THOR., On Eur. Spid., p. 125.

Vid. THOR., loc. cit. — *Lethia stigmatisata* MENGE 1869<sup>1)</sup> is identical with *Ciniflo puta* CAMBR. 1863<sup>2)</sup>, according to original specimens communicated by MENGE and examined by CAMBRIDGE, and ought therefore to be called *Lethia puta* (CAMBR.).

(Pag. 148.) **Ergatis pallens** [= *Dictyna variabilis* C. KOCH 1836, *Var.*].

Syn.: 1836. DICTYNA VARIABILIS C. KOCH, Die Arachn., III, p. 29, Tab. LXXXIII, fig. 187.

1867. „ „ OHL., Aran. d. Prov. Preuss., p. 42.

Var.  $\beta$ , *pallens*:

Syn.: 1859. ERGATIS PALLENS BLACKW., Descr. of six rec. disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., III, p. 94.

1) Preuss. Spinn., III, p. 250, Pl. 48, tab. 146.

2) Descr. of 24 new spec., *etc.*, in Zoologist, 1863, p. 8570 (10).

WALCKENAER erroneously refers (Ins. Apt., II, p. 489) *D. variabilis* C. KOCH to his *Drassus (Argus) viridissimus*. In the male of *D. variabilis* the apex of the outer side of the tibial joint of the palpus forms a tolerably strong, outstanding tooth; at the apex, towards the outer side, the patellar joint exhibits a corner or very small tooth; the basal, backward-directed process of the bulbus is, when viewed from the side, blunt and curved a little downwards, but it is not compressed, broader behind and at the apex broadly truncated, as it is in *Dict. viridissima*, in which moreover the little tooth at the end of the patellar joint is wanting: the blunt process formed by the dilated apex of the tibial joint does not stand out so decidedly and toothlike in *D. viridissima* as in *D. variabilis*. In neither sex of *D. variabilis* has the abdomen the fine green colour that distinguishes *D. viridissima*, both ♂ and ♀; and besides, *D. viridissima* is not inconsiderably larger than *D. variabilis*, especially the female.

CAMBRIDGE, who states <sup>1)</sup> that *D. (Ergatis) variabilis* is met with in England, expresses his suspicion that *E. pallens* BLACKW. is only a variety of this species; and I am so much the more convinced that he is right in this, as I have myself seen specimens of *D. variabilis* with just such a dark spot on the abdomen as distinguishes "*E. pallens*." I have however myself never seen an English specimen of this form. — On *D. variabilis*, which is perhaps identical with *Drassus (Argus) flavescens* WALCK. <sup>2)</sup>, see more farther on under *D. viridissima* WALCK.

(Pag. 150.) **Veleda lineata** [= *Uloborus Walckenaerii* LATR. 1806].

Syn.: 1806. ULOBORUS WALCKENAERIUS LATR., Gen. Crust. et Ins., I, p. 100.

1831. " " HAHN, Die Arachn., I, p. 122, Tab. XXXV, fig. 92.

1841. " " WALCK., H. N. d. Ins. Apt., II, p. 228, Pl. 20, fig. 1.

1859. VELEDA LINEATA BLACKW., Descr. of six rec. disc. spid., cet., in Ann. and Mag. of Nat. Hist., 3 Ser., III, p. 96.

1869. ULOBORUS WALCKENAERII THOR., On Eur. Spid., p. 65.

The identity of *V. lineata* and *U. Walckenaerii*, which I loc. cit. had without hesitation assumed, has been confirmed by CAMBRIDGE <sup>3)</sup>, who has compared BLACKWALL's type-specimens of *V. lineata*

1) Descr. of some Brit. Spid. etc., p. 414.

2) H. N. d. Ins. Apt., I, p. 632; IV, p. 501.

3) Descr. of some Brit. Spid. etc., p. 415.

with specimens from the continent of *U. Walckenaerii*, and has, like me, caught individuals of the species in their circular webs.

Beside *U. Walckenaerii* there are, as far as I know, only two other species of this remarkable genus, *U. plumipes* LUC.<sup>1)</sup> (Sicily) and *U. Costæ* THOR.<sup>2)</sup> (Naples), belonging to the Fauna of Europe. *U. Latreillii* THOR. 1858<sup>3)</sup>, which was found at Göteborg in a ship that had arrived from the East Indies (probably Java), certainly does not belong to the fauna of our quarter of the world: it is probably identical with *U. domesticus* DOLESCH. 1859<sup>4)</sup>, which according to DOLESCHALL is very common in Amboina, in dwelling-houses and damp, dark places.

(Pag. 157.) ***Agelena montana*** [= ***Hahnia montana*** (BLACKW.) 1841].

*Syn.*: 1841. AGELENA MONTANA BLACKW., The differ. in the numb. of eyes, *cet.*,  
in Transact. of the Linn. Soc., XVIII, p. 622.

1847. ARGUS MONTANUS WALCK., H. N. d. Ins. Apt., IV, p. 505.

1871. HAHNIA MONTANA THOR., Rem. on Syn., p. 165.

As regards *Hahnia pusilla* C. KOCH, which BLACKWALL takes up under this species, and its difference from *H. (A.) montana* and *H. pusilla* WESTR. (*Agelena nava* BLACKW.), see above, pp. 163—165.

(Pag. 161.) \****Agelena celans*** [= ***Liocranum*** (?) ***celans*** (BLACKW.) 1841].

*Syn.*: 1841. AGELENA CELANS BLACKW., The differ. in the numb. of eyes, *cet.*,  
p. 624.

1847. ARGUS CELANS WALCK., H. N. d. Ins. Apt., IV, p. 504.

I suspect that this to me unknown species, as well as the next following, belongs rather to the genus *Liocranum* L. KOCH, than to *Apostenus* WESTR., to which I formerly (On Eur. Spid., p. 26) supposed that both these species were to be aggregated.

1) Explor. de l'Algérie, Anim. Artic., I, p. 252, Pl. 15, fig. 8; CANESTR. e PAY., Catal. sist. degli Aran. Ital., in Archiv. p. la Zool., l'Anat. e la Fisiol., Ser. II, Vol. II, p. (20).

2) Till kännedomen om släkten *Mithras* och *Uloborus*, in Öfvers. af Vet.-Akad. Förhandl., XV (1858), p. 195.

3) Ibid., p. 197.

4) Tweede Bijdr. t. de Kenn. d. Arachn. v. d. Ind. Archip. (Verhandel. d. Natuurkund. Vereenig. in Nederlandsch Indië), p. 46, Tab. VII, fig. 2.

(Pag. 162.) \**Agelena gracilipes* [= *Liocranum gracilipes* (BLACKW.) 1859].

*Syn.*: 1859. AGELENA GRACILIPES BLACKW., Descr. of six rec. disc. Spid., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., III, p. 97.  
1871. DRASSUS PALLIARDII CAMBR., Descr. of some Brit. Spid., *cet.*, p. 413.

Under this species CAMBRIDGE cites "*Liocranum Palliardii* L. KOCH", and calls it *Drassus Palliardii*; but as far as I am aware, L. KOCH has never yet described any spider under that name, and it cannot therefore be taken up among the synonyms of the species before us, much less displace the appellation under which it has long been described and figured. *Private* specific and generic names (so called "manuscript-names" or "in litteris-names", names derived from private or public collections and the like) must not be confounded with names that have become *the property of science*, i. e. such as have been fixed by descriptions or figures made public in print, and with which alone in the registration of synonyms and the decision of questions of priority we have to do. Private names cannot possibly be controlled either as regards the time when they were imposed, or the species they indicate; and it does not require much consideration to see to what abuses it would lead, if for example everybody could make pretension to priority for a name, which he chose to state that he had at some period or other given to a species in his private collection, in preference to a denomination of the same species subsequently to that period published in print and definitively fixed by a description. Conf. THOR., On Eur. Spid., p. 5.

(Pag. 163.) *Tegenaria domestica* [= *Tegenaria Guyonii* (GUÉR.) 1837.]

*Syn.*: 1837. ARANEA GUYONII GUÉRIN-MÉNEVILLE, Iconogr. du Règne Anim., Arachn., p. 7, Pl. 2, fig. 1.  
1841. TEGENARIA INTRICATA C. KOCH, Die Arachn., VIII, p. 29, Tab. CCLXI, figg. 610, 611.  
1841. " GUYONII WALCK., H. N. d. Ins. Apt., II, p. 5.  
1843. " DOMESTICA BLACKW., A Catal., *cet.*, in Transact. of the Linn. Soc., XIX, p. 117 (*sec.* Spid. of Gr. Brit.).  
184.. " GUYONII LUC., Explor. d. l'Algérie, Anim. Artic., I, p. 241.  
1871. " INTRICATA CAMBR., Descr. of some Brit. Spid., *cet.*, p. 416.  
1871. " GUYONII THOR., Rem. on Syn., p. 156.

CAMBRIDGE loc. cit. has arrived at the same conclusion with myself, viz. that *T. domestica* BLACKW. is identical with *T. intricata*

C. KOCH, and not with the true *T. domestica* (CLERCK), CET. *T. intricata* C. KOCH is however certainly the same species as *Ar. Guyonii* GUÉR., and the specific name *Guyonii* ought then, as the older, to be preferred. — As regards the difference between *T. Guyonii* and the right *T. domestica*, vid. sup., loc. cit.

(Pag. 169.) *Cælotès saxatilis* [= *Cælotès atropos* (WALCK.) 1830].

- Syn.: 1830. DRASSUS ATROPOS WALCK., Faune Franç., Arachn., p. 170 (= ♀).  
 1833. CLUBIONA SAXATILIS BLACKW., Charact., cet., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 436.  
 1834. DRASSUS " ID., Recherches in Zool., p. 332 (sec. Spid. of Gr. Brit.).  
 1834. ARANEA TERRESTRIS REUSS, Zool. Misc., Arachn., p. 210 (215), Pl. XIV, fig. 10.  
 1837. DRASSUS ATROPOS WALCK., H. N. d. Ins. Apt., I, p. 627 (ad part.).  
 1837. AMAUROBIUS SUBTERRANEUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 15.  
 1837. " TIGRINUS ID., ibid., p. 16.  
 1839. " TERRESTRIS ID., Die Arachn., IV, p. 45, Tab. CXCH, figg. 463, 464.  
 1841. CÆLOTES SAXATILIS BLACKW., The differ. in the numb. of eyes, cet., p. 618.  
 1855. AMAUROBIUS TERRESTRIS L. KOCH, Z. Artencharacter. bei d. Spinn., cet., in Korr.-Blatt. d. zool.-miner. Vereins in Regensburg, IX, p. 163, fig. 2.  
 1868. CÆLOTES TERRESTRIS ID., Die Arachn.-gatt. Amaur., Cælotès u. Cybæus, pp. 33, 42, figg. 20, 21.

That WALCKENAER'S *Drassus atropos* 1830 is identical with *C. saxatilis*, or *C. terrestris* (C. et) L. KOCH, of which last I have received examples from L. KOCH himself and have collected numerous female specimens at Pyrmont and Kissingen, appears to me hardly to admit of a doubt. In the passage cited above from the Faune Franç., WALCKENAER in fact says, that in *D. atropos* and other "*Spéophiles*" the pairs of legs decrease in length in the following order: 4, 1, 2, 3; when contrary to this statement it is said in Ins. Apt., that, next to the 4:th, the 3:rd pair is the longest, and that the 1:st is the shortest, this is evidently nothing else than a slip of the pen, and it is clear that no stress can be laid on WALCKENAER'S assertion (Ins. Apt., IV, p. 441), that *C. terrestris* and *saxatilis* cannot be the same as *D. atropos*, because in the former the relative lengths of the legs are 4, 1, 2, 3. — Mr SIMON, to whom I have

sent specimens of "*C. terrestris*", agrees with me in considering it identical with *D. atropos* WALCK.

*Drassus segestriformis* DUF. 1820 <sup>1)</sup>, which WALCKENAER cites under *D. atropos* in his Ins. Apt., I, confounding it with the right *Cæl. atropos*, is probably a different species; even if DUFOUR's statement, that the thighs of his spider are entirely destitute of spines, be deserving of but little weight, yet his mentioning no markings on the abdomen, but describing it as *wholly black* (Conf. WALCKENAER's description of the male), seems to indicate that *D. segestriformis* is a separate species.

CAMBRIDGE has kindly sent me a ♂ and ♀ *ad.* of "*C. saxatilis* BLACKW."; the female agrees exactly with German examples of *Cæl. atropos* (*terrestris*) ♀, and the male presents no essential deviations. The process of the patellar joint, viewed from above and a little from the inner side, is perhaps somewhat more abruptly truncated at its apex than in a German male specimen (for which I am obliged to L. KOCH); above, at the base, it is slightly thickened, which is hardly the case in the German specimen. L. KOCH however says that this process is "constricted over the base".

(Pag. 194.) **Theridion pallens** [= *Theridium pallens* BLACKW. 1834].

- Syn.: 1834. THERIDION PALLENS BLACKW., Researches in Zool., p. 357 (*sec.* Spid. of Gr. Brit.).  
 1834. " MINIMUM REUSS, Zool. Misc., Arachn., p. 243 (249), Pl. XVII, fig. 2.  
 1837. EPEIRA NUBILA BLACKW., Charact., *cet.*, in Lond. and Edinb. Phil. Mag., 3 Ser., X, p. 101.  
 ?1841. THERIDION ALBENS ID., The differ. in the numb. of eyes, *cet.*, p. 627.  
 ?1861. " " ID., Spid. of Gr. Brit., I, p. 199, Pl. XIV, fig. 130.  
 1870. THERIDIUM PALLENS THOR., Rem. on Syn., p. 85.

*T. minimum* REUSS is quite another species than *Th. minimum* WESTR. (*Th. Ohlertii* THOR.): vid. sup., p. 85. — In Sweden *Th. pallens* has lately been met with by Dr TULLBERG in Skåne and by Dr v. PORATH in Småland. — Mr CAMBRIDGE thinks that *Th. albens* BLACKW. is but a variety of *Th. pallens*, an opinion which appears to me very probable.

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1) Observ. gén. sur les Arachn., in Ann. gén. d. Sc. phys., VI, p. 297, Pl. XCV, fig. 1.



(Pag. 196.) **Theridion stictum** [= *Steatoda sticta* (CAMBR.) 1861].

Syn.: 1861. THERIDION STICTUM CAMBR., Descr. of ten new spec., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 432.

1871. " " ID., Descr. of some Brit. Spid., *cet.*, p. 420, Pl. 55, No. 17 (= ♂ *ad.*).

(Pag. 196.) **Theridion inornatum** [= *Euryopis inornata* (CAMBR.) 1861].

Syn.: 1861. THERIDION INORNATUM CAMBR., Descr. of ten new spec., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 433.

This little spider, of which CAMBRIDGE has sent me a ♂ and ♀ *ad.*, belongs also to the fauna of Sweden: I have a female that I received of Mr G. EISEN, who had captured it in Blekinge, in the neighbourhood of Carlshamn. — In the male the posterior row of eyes is evidently curved backwards; in the female on the contrary, this row, when viewed directly from above, is straight, so that the species stands on the line of transition between *Euryopis* and *Steatoda*, though it more nearly approaches the former genus in its general appearance and in its high clypeus. Yet the legs of the 1:st pair are fully as long as, perhaps even a trifle longer than (not, as in the typical species of *Euryopis*, visibly shorter than), those of the 4:th pair.

*E. inornata* is closely allied to *Pachydactylus pronus* MENGE<sup>1)</sup>, but is without doubt different from it: the lamina of the male's palpus has no tooth at the apex; in the female the tarsal joint of the palpus is *not* much thickened and egg-shaped, as is said to be the case in *P. pronus* (*Euryopis prona*), but of about the same thickness as the tibial joint, long and tapering towards its apex. The colour of the legs also appears to be something different: in *E. inornata* only the entire tibiae of the two anterior pairs, and the tibiae of the 4:th pair from the middle to the apex, as also the anterior thighs towards the apex, are darker than the rest of the legs.

(Pag. 237.) **Linyphia ericæa** [= *Linyphia ericæa* BLACKW. 1853].

Syn.: 1853. LINYPHIA ERICÆA BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XI, p. 22.

1) Preuss. Spinn., II, p. 176, Pl. 33, tab. 80.

BLACKWALL's type-specimens of this little *Linyphia* have been lost, but the Rev. Mr CAMBRIDGE has sent me a ♂ and ♀ of a species from Scotland, which he considers identical with it, and to which *L. ericæa* BLACKW. ♂ also appears to me to belong, though as regards the *females* I doubt their identity. — In the male the spines of the legs are fine and very long, on the upper part of the tibiæ at least three times as long as the joint's diameter; the thighs of the 1:st pair have *one* spine, those of the others none; the metatarsi towards the base exhibit *one* very fine spine. The eyes are situated very close together, the distance between them being nowhere, not even between the posterior centre eyes, so great as an eye's diameter. The height of the clypeus is hardly so great as the length of the area of the centre eyes. The patellar joint of the palpi is scarcely longer than it is broad; the tibial joint is as long as the patellar, somewhat thicker, broader towards the apex: when viewed from the side, it is convex both above and below, and broader than it is long, with a tolerably strong bristle above. The bulbus exhibits a short upward and outward turned tooth on the outer side towards the base. Cephalothorax and legs are of a pale brownish yellow colour, the abdomen above whitish- or greyish yellow, almost uniform in colour; the sternum and belly are soot-coloured, which colour extends a little above the anus. — The *female* is in colour similar to the male, except that her cephalothorax and extremities are darker, yellowish brown. The vulva consists of a short, thick protuberance, rounded at the apex, directed backwards, and paler along the middle of the under side; the "four prominent contiguous processes directed obliquely downwards and backwards, the posterior being the shortest", which according to BLACKWALL are connected with the sexual organs, are not to be found in the specimen that I have seen, which nevertheless appears to be full-grown, and I therefore think that the female described by BLACKWALL is not the right female to *L. ericæa* n.; which moreover is *not*, as BLACKWALL says of the female described by him, much larger than the male.

(Pag. 241.) *Linyphia albula* [= *Linyphia albula* CAMBR. 1861].

*Syn.*: 1861. LINYPHIA ALBULA CAMBR., DESCR. of ten new spec. of spid., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 435.

♀. The thighs of the first pair have *three* fine, short spines, the two next following pairs have each *one*, the last pair *none*; the

tibiæ have 5 or 6 spines, the metatarsi two or more, at least on the anterior legs. The tarsal joint of the palpi is almost cylindrical, not tapering and pointed. The anterior row of eyes is curved backwards, the posterior, when viewed from above, curves a little forwards. The distance between the posterior centre and lateral eyes is something greater than the interval between the two posterior centre eyes, which is about equal to the diameter of one of these eyes: the distance between the anterior lateral and centre eyes is more than double as great as the diameter of the lateral eye. The distance from the margin of the clypeus to the anterior centre eyes is somewhat less than the length of the area of the centre eyes. — Mr CAMBRIDGE has had the kindness to lend me the only hitherto discovered specimen of this species. BLACKWALL's figure of it is remarkably good.

(Pag. 244.) **Linyphia obscura** [= *Linyphia obscura* BLACKW. 1841].

Syn.: 1841. LINYPHIA OBSCURA BLACKW., The differ. in the numb. of eyes, *cet.*, p. 665.

1847. " " WALCK., H. N. d. Ins. Apt., IV, p. 499.

A ♂ of this species has been found by Dr TULLBERG in Skåne; I have also seen specimens from Scotland, transmitted to me by the Rev. O. P. CAMBRIDGE. — *L. obscura* ♂ is easily distinguished by the lamina of the palpus having at the base, inwards, a strong, erect, pointed and slightly curved tooth: see BLACKWALL's excellent description. His *figure* of this spider is of little use.

To BLACKWALL's description may be added, that the thighs of the 1:st pair have one spine above, and that the following thighs are without spines; the tibiæ have two spines above, the anterior moreover one towards the apex on each side; these spines are pretty long, those of the tibiæ for example double as long as the diameter of the joint. The hindmost metatarsi have *one* short, fine spine. The anterior row of eyes is sensibly curved backwards; the distance between the margin of the clypeus and the anterior centre eyes is something greater than the length of the area of the centre eyes. The four posterior eyes are situated at equal distances, of less than the diameter of an eye, from each other. The vulva is formed of a short, broad, reddish brown lamina directed backwards, which is twice emarginated at the broadly truncated apex, and accordingly termi-

nates with three short teeth, of which the middle one is shorter and slenderer than the others.

In the only female specimen that I have seen, the back of the abdomen has two rows of large, dark, rounded, closely arranged spots, and a fine, not very distinct, dark, longitudinal middle-line; a still larger dark, rounded spot is met with on each side, in front, and a couple of oblique, less distinct, oblong spots behind them; the greyish yellow, light-mottled ground-colour between the spots forms narrow, more or less complete rings around them. The belly is dark brown. In the specimens of the male sex which I have had the opportunity of seeing, the back of the abdomen is of an almost uniform dark-brown colour, only with indistinct transverse bands behind and similar spots in front.

(Pag. 246.) **Linyphia circumspecta** [= *Linyphia circumspecta* BLACKW. 1854].

*Syn.*: 1854. LINYPHIA CIRCUMSPECTA BLACKW., Deser. of some newly disc. spec., *et.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XIII, p. 177.

Of this species I have only seen a male specimen, for which I have to thank Mr CAMBRIDGE: its colour is considerably darker than that of BLACKWALL's figure. The cephalothorax is dark-brown, blackish towards the margin; the legs are pale brownish yellow, with the joints blackish only at the extreme apex; the abdomen is of a dark olive colour, with 5 or 6 pale transverse bands, which are almost straight, scarcely bent into an angle, and of which the anterior are more or less distinctly broken off in the middle, so that the first thus forms two large somewhat rounded spots. The thighs of the first pair have *one* fine spine, the two succeeding pairs have each a very short, rudimentary spine; the metatarsi appear to be destitute of spines (?); the spines on the tibiæ are scarcely double as long as the joint's diameter. The clypeus is transversely depressed, not higher than the length of the area of the centre eyes. The posterior centre eyes are a little farther from each other than from the lateral eyes, but their distance from each other is not fully an eye's diameter. The anterior row of eyes is straight, and the eyes distributed along it at about equal distances. The reddish brown genital bulb has on the outer side, towards the base, a strong, inward

curved, pointed appendage, and at the apex a fine circularly curved spine, as is stated by BLACKWALL.

(Pag. 251.) \**Neriëne rufipes* [= *Erigone* (?) *lapidicola* N.].

*Syn.*: †1833. NERIËNE RUFIPES BLACKW., Charact. of some undescr. gen., *cet.*, in  
 Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 345.  
 1834. " " ID., Researches in Zool., p. 368 (*sec. Spid. of*  
*Gr. Brit.*).

SUNDEVALL as early as 1830 gave the name of *Linyphia rufipes* to another species of the genus *Erigone*, viz. *Neriëne munda* BLACKW. 1841, which is probably = the real *Ar. rufipes* LINN. 1758. Vid. sup., p. 126. As *Ner. rufipes* BLACKW. seems to belong to the same genus, I have given it a new name, *E. lapidicola*.

(Pag. 253.) *Neriëne errans* [= *Linyphia errans* (BLACKW.) 1841].

*Syn.*: 1841. NERIËNE ERRANS BLACKW., The differ. in the numb. of eyes, *cet.*, p. 643.  
 1847. ARGUS ERRANS WALCK., H. N. d. Ins. Apt., IV, p. 511.

♂ *ad.* — The clypeus is equal in height to the length of the area of the centre eyes; the anterior row of eyes is but slightly curved backwards, almost straight; the distance between the anterior lateral and centre eyes is something greater than the diameter of the oval lateral eyes. The posterior row of eyes, when viewed from above, is almost straight, little curved forwards, with the eyes situated at equal distances: these distances are about as great as the diameter of an eye. The patellar joint of the palpus is something longer than it is broad, the tibial a trifle longer but decidedly thicker than the patellar joint: on the outer side it forms a small corner, and has on the outer and upper side a few rather long, slightly curved hairs. The bulbus has at the base on the outer side an upward and inward bent slender appendage. Cephalothorax, legs and palpi are yellowish brown, the bulbus more rust-coloured, the abdomen greyish brown, without any distinct pattern.

♀. The *female* is somewhat lighter in colour: its cephalothorax and oral apparatus are reddish brown, with the pars cephalica somewhat darker, the sternum, legs and palpi brownish yellow, the abdomen greyish yellow, approaching to olive. The distances between the eyes of the posterior row, at least that between the centre and

lateral eyes, is somewhat greater than in ♂, and the row is more distinctly curved forward. Besides two fine spines on the upper part, the tibiæ of the 1:st pair have, towards the apex, two similar spines *on each side*, and I in consequence refer the species to the genus *Iinyphia*, although in its general appearance it more nearly corresponds with *Erigone*. The spines are rather short, only a little longer than the diameter of the tibia. (In the only male specimen that I have seen, the spines and hairs are for the most part rubbed off). The mandibles are short, strong, egg-shaped, almost as thick as the thighs of the 1:st pair, double as long as they are broad at the base, more than double as long as the clypeus is high. (In ♂ they are longer and slenderer). The tarsal joint of the palpus is gradually somewhat tapering towards the apex. The vulva appears to consist of a somewhat transverse brown area, which at the posterior extremity exhibits a transversely half-oval, large opening. — A ♂ and a ♀ from England have been kindly sent to me by Mr CAMBRIDGE.

(Pag. 259.) **Neriëne affinis** [= *Erigone affinis* (BLACKW.) 1855].

- Syn.*: 1855. NERIËNE AFFINIS BLACKW., Descr. of two newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XVI, p. 121.  
 1868. TMETICUS LEPTOCAULIS MENGE, Preuss. Spinn., II, p. 185, Pl. 35, tab. 85.  
 1871. ERIGONE AFFINIS THOR., Rem. on Syn., p. 127.

BLACKWALL'S description of this species perfectly suits a male specimen of *Tm. leptocaulis*, with which Mr MENGE has favoured me; Mr CAMBRIDGE also tells me that "*Tm. leptocaulis* MENGE is certainly identical with *Ner. affinis* BLACKW." — See more on this species above, loc. cit.

(Pag. 260.) **Neriëne Huthwaitii** [= *Erigone Huthwaitii* (CAMBR.) 1861].

- Syn.*: 1861. NERIËNE HUTHWAITII CAMBR., Descr. of ten new spec., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 436.  
 1871. ERIGONE " THOR., Rem. on Syn., p. 127.

Mr CAMBRIDGE has kindly sent me an English ♂ *ad.* of this species, on wick see above, loc. cit.

(Pag. 262.) **Neriëne saxatilis** [= *Linyphia saxatilis* (BLACKW.) 1844].

Syn.: 1844. NERIËNE SAXATILIS BLACKW., Descr. of some newly disc. spec., *cet.*,  
in Ann. and Mag. of Nat. Hist., XIII, p. 183.

To BLACKWALL'S description the following particulars may be added. The cephalothorax is quite of the ordinary form. When seen in profile, its back rises slightly and regularly from the hinder slope to the posterior centre eyes, with only an inconsiderable depression behind the pars cephalica. The fore tibiæ have at least three very fine spines, two above and *one on the* (hinder) *side*, and I consequently refer the species to *Linyphia*, though in other respects it more resembles an *Erigone*. The eyes are small; the posterior row is slightly curved forwards, with the centre eyes a little larger and a little more distant (about an eye's diameter) from each other than from the lateral eyes. The anterior row of eyes is slightly curved backwards, with the distance between the lateral and centre eyes not greater than half the diameter of a lateral eye, but a little greater than the distance between the two centre eyes. The height of the slightly depressed clypeus is nearly equal to the length of the area of the four centre eyes. The apex of the tibial joint of the palpus is on the inner side drawn out into a rather short, strongly outward-curved process. For other particulars vid. BLACKWALL'S description. — For a ♂ *ad.* of this species, which I have had for examination, I am indebted to the kindness of Mr CAMBRIDGE.

(Pag. 265.) \***Neriëne parva** [= *Erigone* (?) *minima* (WALCK.) 1847].

Syn.: †1841. NERIËNE PARVA BLACKW., The differ. in the numb. of eyes, *cet.*,  
p. 647.

1847. ARGUS MINIMUS WALCK., H. N. d. Ins. Apt., IV, p. 512.

BLACKWALL had already p. 635 of his work here cited given the specific name *parva* to another species of *Erigone*, *Walckenaera parva*, for which that name must be retained. I have therefore for his *Neriëne parva*, which is probably also an *Erigone*, accepted WALCKENAEER'S specific name, *minima*.

(Pag. 266.) **Neriëne tibialis** [= *Erigone tibialis* (BLACKW.) 1836].

Syn.: 1836. NERIËNE TIBIALIS BLACKW., Charact. of some undescr. spec., *cet.*,  
in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 485.

1868. DICYMBIUM CLAVIPES MENGE, Preuss. Spinn., II, p. 193, Pl. 37, tab. 91.  
 1871. ERIGONE TIBIALIS THOR., Rem. on Syn., p. 104.

I possess a male specimen of this spider from Nürnberg, which I received from Dr L. KOCH under the name of *E. tibialis* (BLACKW.); it is also met with in Sweden: see above, loc. cit.

(Pag. 277.) **Neriëne vigilax** [= *Erigone vigilax* (BLACKW.) 1853].

Syn.: 1853. NERIËNE VIGILAX BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XI, p. 24.

♂ *ad.* — The cephalothorax is smooth and bright; the pars cephalica is somewhat elevated, and its anterior part slightly convex; the back is thence backwards to the commencement of the hinder slope slightly concave longitudinally, so that the place, where that depressed portion passes over into the hinder slope, forms, when the cephalothorax is viewed in profile, a very low, raised angle. The posterior row of eyes is a little curved forward, its eyes of almost equal dimensions and at equal distances (an eye's diameter) from each other. The anterior row of eyes curves a little backwards; the distance of the lateral from the centre eyes is less than the diameter of the former, and also than the distance of the two centre eyes from each other. The area of the centre eyes is a little longer than it is broad behind. The height of the clypeus is something greater than the length of the area of the centre eyes: the distance from its margin to the anterior row of eyes is almost as great as the length of the anterior row of eyes. The patellar joint of the palpus is *much shorter and slenderer* than the patella of the 1st pair. The erect hairs on the tibiæ are extremely fine and short, hardly so long as the semi-diameter of the joint. As regards the palpus-clava, see BLACKWALL'S description. — I am indebted to the kindness of Mr CAMBRIDGE for a specimen of this pretty species.

(Pag. 278.) **Neriëne gibbosa** [= *Erigone gibbosa* (BLACKW.) 1841].

Syn.: 1841. NERIËNE GIBBOSA BLACKW., The differ. in the numb. of eyes, *cet.*, p. 653.  
 1847. ARGUS GIBBOSUS WALCK., H. N. d. Ins. Apt., IV, p. 513.

The male of this species, which is of about the same size as the preceding, *Ner. (Erig.) vigilax*, is distinguished by the *middle part*



of the back of the cephalothorax being raised into a large protuberance, occupying a full third part of the length of the back. The posterior row of eyes is curved forwards, with the eyes situated at equal distances, these distances being rather greater than an eye's diameter; the anterior row of eyes is but slightly curved backwards, and the distances between its eyes almost equal, less than the diameter of a lateral eye; the area of the four centre eyes is little longer than it is broad behind. The clypeus is broadly depressed transversely, and its height something greater than the length of the area of the centre eyes, but not quite so great as the length of the anterior row of eyes. The patellar joint of the palpus is long, *half as long again* as the patella of the 1:st pair; the tibial joint is about two thirds the length of the patellar joint. For other particulars see BLACKWALL'S description. — An adult male of this species has been given to me by Mr CAMBRIDGE.

(Pag. 279.) *Neriëne tuberosa* [= *Erigone tuberosa* (BLACKW.) 1841].

*Syn.*: 1841. NERIËNE TUBEROSA BLACKW., The differ. in the numb. of eyes, *cet.*, p. 654.

1847. ARGUS TUBEROSUS WALCK., H. N. d. Ins. Apt., IV, p. 514.

This species is closely allied to the two preceding, especially *E. vigilax*; the male however is easily distinguished from *E. vigilax* ♂ by its palpi being longer and by the back of the cephalothorax being posteriorly, at its junction with the posterior slope, elevated into a low, transverse protuberance, which is, *though but a trifle, higher* than the *pars cephalica*, and separated from it by a long, slight, longitudinal depression. In *E. gibbosa* ♂ on the other hand the protuberance is considerably greater, *much higher* than the *pars cephalica*, and strongly rounded off above; its cephalothorax is covered with stout hairs in the angle between the protuberance and the head. — The posterior row of eyes in *E. tuberosa* is slightly curved forwards, the centre eyes a little farther distant (fully an eye's diameter) from each other than from the lateral eyes. The anterior row curves but little backwards; the distances between its eyes are nearly equal, and amount hardly to the semi-diameter of an eye. The length of the area of the centre eyes is not greater than its breadth behind; the clypeus is slightly depressed, a little higher than the length of that area, but its height is not so great as the

length of the anterior row of eyes. The patellar joint of the palpus is fully *as long as*, or a *little longer than*, the patella of the 1:st pair, the tibial is not inconsiderably shorter than the patellar joint. — A ♂ belonging to this species has been sent me by Mr CAMBRIDGE; I have also been favoured with a male specimen from Nürnberg by Dr L. KOCH.

(Pag. 285.) **Neriëne herbigrada** [= *Erigone herbigrada* (BLACKW.) 1854].

Syn.: 1854. NERIËNE HERBIGRADA BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XIII, p. 179.

1871. ERIGONE MORDENS THOR., Rem. on Syn., p. 144.

From a male specimen of *Ner. herbigrada* BLACKW., which I have lately received from Mr CAMBRIDGE, I find that this species is identical with the *E. mordens* described by me loc. cit., a circumstance which I had formerly overlooked.

(Pag. 286.) **Neriëne abnormis** [= *Linyphia abnormis* (BLACKW.) 1841].

Syn.: 1841. NERIËNE ABNORMIS BLACKW., The differ. in the numb. of eyes, *cet.*, p. 649.

1847. ARGUS ABNORMIS WALCK., H. N. d. Ins. Apt., IV, p. 512.

This spider is unquestionably a *Linyphia*, to the species of which genus BLACKWALL says that it 'makes a near approximation by the structure of its oral apparatus and by the disposition and relative size of the eyes'. The legs are armed with very fine, pretty long spines: on at least the fore legs the tibiæ have three (or more?) spines, two above (which are about double as long as the joint's diameter) and one on the anterior side: the thighs and metatarsi seem to be destitute of spines. The posterior row of eyes, when viewed from above, is straight, with the eyes situated at equal distances from each other, these distances being somewhat greater than an eye's diameter; the distance between the anterior and posterior centre eyes is slightly greater than the diameter of the latter. The anterior row of eyes is almost straight, but little curved backwards, its lateral being separated from its centre eyes by an interval almost equal to the diameter of the former. The length of the area of the

centre eyes is very nearly the same as its breadth behind. The height of the clypeus is double the length of the area of the centre eyes, and hardly less than the length of the anterior row of eyes. The bulbus has on the outer side at the base, upward, a process of an especially characteristic form (of which see BLACKWALL'S description). — These particulars are derived from a male specimen, for which I am indebted to the kindness of Mr CAMBRIDGE.

(Pag. 290.) **Walckenaëra cuspidata** [= *Erigone cuspidata* (BLACKW.) 1833].

*Syn.*: 1833. WALCKENAËRA CUSPIDATA BLACKW., Charact. of some underscr. spec., *cet.*, in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 108.

1871. ERIGONE CUSPIDATA THOR., Rem. on Syn., p. 111.

(Pag. 292.) **Walckenaëra Hardii** [= *Erigone Hardii* (BLACKW.) 1850].

*Syn.*: 1850. WALCKENAËRA HARDII BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., VI, p. 340.

1869. LEPTOTHRIX CLAVIFES MENGE, Preuss. Spinn., III, p. 240, Pl. 47, tab. 140.

1871. ERIGONE HARDII THOR., Rem. on Syn., p. 112.

(Pag. 293.) **Walckenaëra unicornis** [= *Erigone unicornis* (CAMBR.) 1861].

*Syn.*: 1861. WALCKENAËRA UNICORNIS CAMBR., Descr. of ten new spec., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 437 (10).

1867. MICRYPHANTES STYLIFER OHL., Aran. d. Prov. Preuss., p. 54, 66.

1869. CORNICULARIA MONOCEROS MENGE, Preuss. Spinn., III, p. 226, Pl. 44, tab. 125.

1871. ERIGONE UNICORNIS THOR., Rem. on Syn., p. 111.

English specimens of this and the two preceding species, *W. cuspidata* and *W. Hardii*, kindly transmitted to me by Mr CAMBRIDGE, have been compared with original specimens of the species cited as their synonyms. See above, *locis cit.*

(Pag. 295.) **Walckenaëra fuscipes** [= *Erigone fuscipes* (BLACKW.) 1836].

*Syn.*: 1836. WALCKENAËRA FUSCIPES BLACKW., Charact. of some undescr. spec.,  
cet., in Lond. and Edinb. Phil. Mag., 3  
Ser., VIII, p. 481.

The cephalothorax of the male in this species is *very* finely and closely punctured, glossy; it gradually rises pretty considerably forwards, yet so, as, when viewed from the side, to show a little depression between the pars cephalica and pars thoracica, which are both longitudinally slightly convex; on each side of the head, behind the lateral eyes, there is a very large and deep depression, which above is elongated backwards and in front is dilated downwards, in consequence of which the back of the pars cephalica is unusually narrow in front; there is a narrow, longitudinal middle-fovea or -depression above, immediately behind the posterior row of eyes. The forehead is deeply depressed between the anterior and posterior centre eyes; viewed from in front, the upper and narrower portion of the head has perpendicular walls, with the upper corners rounded, and is about half as broad again as it is high. The distance from the margin of the clypeus to the anterior centre eyes is about equal to the length of the area of the centre eyes, or to that of the anterior row of eyes, which row is somewhat curved forward, with its lateral eyes situated at about a diameter's distance from the small, contiguous centre eyes. The distance of the posterior centre eyes from each other is equal to their diameter; the area of the four centre eyes is very long and narrow, double as long as it is broad behind; the posterior centre eyes are still farther distant from the lateral than from the anterior centre eyes. The apex of tibial joint of the palpus is drawn out into a broad and blunt, forward-pointing lobe. — Mr CAMBRIDGE has obliged me with specimens of this remarkable species.

(Pag. 295.) **Walckenaëra punctata** [= *Erigone punctata* (BLACKW.) 1841].

*Syn.*: 1841. WALCKENAËRA PUNCTATA BLACKW., The differ. in the numb. of eyes,  
cet., p. 629.

1847. ARGUS TRAPEZOIDES WALCK., H. N. d. Ins. Apt., IV, p. 503.

1868. LOPHOMMA STICTOCEPHALUM MENGE, Preuss. Spinn., II, p. 210, Pl.  
41, tab. 108 (*ad part.*: ♂).

1869. MICRONETA SCROBICULATA ID., *ibid.*, III, p. 227, Pl. 44, tab. 126.

1871. ERIGONE PUNCTATA THOR., Rem. on Syn., p. 108.

See above, loc. cit., the foot-note. — Also of this species I possess an English male specimen, for which I am indebted to Mr CAMBRIDGE.

(Pag. 296.) **Walckenaëra parallela** [= *Erigone parallela* (REUSS) 1834].

*Syn.*: 1834. THERIDIUM PARALLELUM REUSS, Zool. Misc., Arachn., in Mus. Senckenb., I, p. 228 (234), Pl. XVI, fig. 1.

1841. ARGUS PARALLELUS WALCK., H. N. d. Ins. Apt., II, p. 366.

1868. LOPHOCARENUM ELONGATUM MENGE, Preuss. Spinn., II, p. 209, Pl. 41, tab. 106.

1871. ERIGONE PARALLELA THOR., Rem. on Syn., p. 121.

*Erigone parallela* WESTR. (Aran. Suec., p. 241) is another species, and = *E. Reussii* THOR.: see above, p. 121.

(Pag. 298.) **Walckenaëra flavipes** [= *Erigone flavipes* (BLACKW.) 1834].

*Syn.*: 1834. WALCKENAËRA FLAVIPES BLACKW., Researches in Zool., p. 322 (sec. Spid. of Gr. Brit.).

The male has its cephalothorax smooth and shining, with the head strongly elevated and forming a protuberance, which, when viewed in profile, is almost double as long at the base as it is high, slightly convex above, sloping abruptly and convexly both before and behind (more abruptly before than behind). The head has a large and deep depression on each side, the bottom of which forms a furrow, extending from the lateral eyes directly backwards along the base of the cephalic eminence. The lower part of the face forms a narrow projecting ledge, in front of the upper part which carries the posterior centre eyes. This upper part or front of the cephalic eminence is hairy, half as broad again as it is high, with the upper angles rounded, and somewhat narrower or slightly constricted below. The posterior centre eyes are separated by an interval at least double as great as their diameter: the anterior row of eyes is straight, its lateral eyes stand at very nearly a diameter's distance from the small, almost contiguous centre eyes. The area of the centre eyes is half as long again as it is broad behind; the height of the clypeus is about equal to the length of that area and to the length of the anterior row of eyes. The upper part of the tibial joint's apex, inward,

is extended into a long, strong, outward-curved process, which about the middle, above, carries a tooth, or at that point as it were lengthens itself with a  $\smile$ -shaped continuation: the bulbous has at the base, above, immediately outside of this process, an upright, sharp, crooked spine. — For the opportunity of myself seeing and examining this species I have to thank Mr CAMBRIDGE.

(Pag. 300.) \***Walckenaëra atra** [= *Erigone sordidata* N.].

Syn.: †1841. WALCKENAËRA ATRA BLACKW., The differ. in the numb. of eyes, *cet.*, p. 631.

1847. ARGUS ATER WALCK., H. N. d. Ins. Apt., IV, p. 508.

As BLACKWALL already in 1833 gave the specific name *atra* to another species of *Erigone* (*E. atra* BLACKW., = *E. vagabunda* WESTR.: see above, p. 102), I have been obliged to give *Walck. atra* BLACKW. a new name, and call it *E. sordidata*.

(Pag. 307.) **Walckenaëra humilis** [= *Erigone humilis* (BLACKW.) 1841].

Syn.: 1841. WALCKENAËRA HUMILIS BLACKW., The differ. in the numb. of eyes, *cet.*, p. 636.

1847. ARGUS HUMILIS WALCK., H. N. d. Ins. Apt., IV, p. 506.

1868. LOPHOCARENUM GLOBICEPS MENGE, Preuss. Spinn., II, p. 207, Pl. 40, tab. 104.

1871. ERIGONE HUMILIS THOR., Rem. on Syn., p. 116.

See above, loc. cit.

(Pag. 312.) **Walckenaëra pumila** [= *Erigone pumila* (BLACKW.) 1841].

Syn.: 1841. WALCKENAËRA PUMILA BLACKW., The differ. in the numb. of eyes, *cet.*, p. 639.

1847. ARGUS PUMILUS WALCK., H. N. d. Ins. Apt., IV, p. 508.

In the male the cephalothorax is exceedingly finely shagreened, not very glossy: the head is elevated into a protuberance, which occupies the whole pars cephalica, and is not more than half as high as the patellæ of the 1:st pair are long, almost double as long at the base as it is high; behind it rises first abruptly, then in a convex form; above it is short, but little convex, in front hairy and sloping (not so steep as behind), and separated by an inconsider-

able projecting ledge from the inferior part of the face; above it is slightly depressed longitudinally; viewed from before, it is at least double as broad as it is high, with the sides somewhat sloping, not quite perpendicular. On both sides, behind the lateral eyes, the head exhibits a deep, oblong fovea or furrow directed backwards, the breadth of which is equal to, or a little greater than, the diameter of a lateral eye. The interval between the two posterior centre eyes is fully as great as the diameter of those eyes. The anterior row of eyes is straight, its lateral eyes being separated by less than their diameter from the almost contiguous centre eyes; the area of the centre eyes is double as long as it is broad behind. The clypeus is visibly higher than the length of the area of the centre eyes, almost as high as the anterior row of eyes is long. The outer border of the lamina is, at the base, above, elevated into a triangular crest, which rises gradually backwards and is perpendicularly terminated at the posterior extremity; the tibial joint has on the outer side near the apex a little tooth pointing forwards; the bulbus exhibits, on the under side, a very long, almost circularly curved spine. This species very closely resembles *E. erythropus* WESTR., but the cephalic eminence is shorter and the palpi entirely different. On *E. erythropus* see above, p. 120.

One ♂ *ad.* of this species I captured at Travemünde in Germany: I have also received of Mr CAMBRIDGE specimens from England.

(Pag. 313.) **Walckenaëra picina** [= *Erigone picina* (BLACKW.) 1841].

*Syn.*: 1841. WALCKENAËRA PICINA BLACKW., The differ. in the numb. of eyes, *cet.*, p. 640.

1847. ARGUS PICINUS WALCK., H. N. d. Ins. Apt., IV, p. 507.

1868. LOPHOCARENUM ERYTHROPUS MENGE, Preuss. Spinn., II, p. 203, Pl. 40, tab. 100.

1871. ERIGONE PICINA THOR., Rem. on Syn., p. 119.

On this species see above. loc. cit.

(Pag. 315.) **Walckenaëra nemoralis** [= *Erigone nemoralis* (BLACKW.) 1841].

*Syn.*: 1841. WALCKENAËRA NEMORALIS BLACKW., The differ. in the numb. of eyes, *cet.*, p. 641.

1847. ARGUS NEMORALIS WALCK., H. N. d. Ins. Apt., IV, p. 507.

The male's cephalothorax is smooth and glossy; the head, which has a strong depression on each side, behind and a little above the lateral eyes, is elevated into a high, very broad and blunt protuberance, which, when seen in profile, is as high as it is broad at the base: in front it is very steep, behind it rises perpendicularly at the base, but immediately afterwards is strongly convex in the upward and forward directions. Viewed from in front the cephalic eminence is broad and flat, as broad as the anterior row of eyes is long, with the angles rounded off, and with steep, slightly convex sides. The posterior centre eyes are small and far apart, the distance between them as much as 3 or 4 times their diameter. A transverse ledge situated just above the anterior row of eyes, separates the cephalic eminence from the lower portion of the face. The anterior row of eyes is straight, its lateral eyes separated from the small, almost contiguous centre eyes by a distance almost double as great as the diameter of the lateral eyes. The height of the clypeus is considerably less than the length of the area of centre eyes. The patellar joint of the palpus is about as long as the patella of the 1st pair, gradually somewhat thicker towards the apex: the tibial is shorter and somewhat thicker than the patellar joint; its apex has on the outer side a fine, pointed, slightly curved spine, and above a somewhat longer and stouter, blunt and straighter process. From *E. ludicra* (CAMBR.), to which this species is closely allied, it is easily distinguished by, for inst., the cephalic eminence *not* being inclined backwards, as it is in *E. ludicra* and *E. elongata* (REUSS): vid. sup., pp. 117, 118. — Mr CAMBRIDGE has kindly furnished me with a ♂ *ad.* of this little species.

(Pag. 316.) **Walckenaëra ludicra** [= *Erigone ludicra* (CAMBR.) 1861].

*Syn.*: 1861. WALCKENAËRA LUDICRA CAMBR., Descr. of ten new spec., *cet.*, in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 438 (11).

On this species see above, p. 117.

(Pag. 341.) **Epeira acalypha** [= *Epeira acalypha* WALCK. 1802].

*Syn.*: 1802. ARANEA ACALYPHA WALCK., Faune Par., II, p. 199.

1805. EPEIRA " ID., Tabl. d. Aran., p. 60.

1831. " GENISTÆ HAHN, Die Arachn., I, p. 11, Tab. III, fig. 7.



1837. ZILLA GENISTÆ C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 5.  
 1837. " DECORA ID., *ibid.*  
 1839. " ACALYPHA ID., Die Arachn., VI, p. 139, Tab. CCXIII, figg. 530, 531.  
 1841. EPEIRA ACALYPHA WALCK., H. N. d. Ins. Apt., II, p. 50.  
 1866. MIRANDA ACALYPHA MENGE, Preuss. Spinn., I, p. 71, Pl. 11, tab. 16.

This beautiful little *Epeira*, so common over a great part of Europe, also belongs to the fauna of Sweden: it has been captured in Skåne by Mr G. A. W. WETTER of Lund.

(Pag. 355.) *Epeira albimacula* [= *Epeira diodia* WALCK. 1802].

- Syn.*: 1802. ARANEA DIODIA WALCK., Faune Par., II, 200.  
 1805. EPEIRA " ID., Tabl. d. Aran., p. 60.  
 1834. ZILLA ALBIMACULA C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 124, 21, 22 (*sec.* Die Arachn.).  
 1839. " " ID., Die Arachn., VI, p. 144, Tab. CCXV, figg. 534, 535.  
 1841. EPEIRA DIODIA WALCK., H. N. d. Ins. Apt., II, p. 55.  
 1854. " ALBIMACULA BLACKW., Supplem. to a Catal., *cet.*, in Ann. and Mag. of Nat. Hist., 2 Ser., XIV, p. 33.

*Ep. albimacula* (C. KOCH), BLACKW., of which I collected specimens both in France and Germany, is undoubtedly identical with *E. diodia* WALCK., as has been already (p. 39) remarked, and as WALCKENAER himself suspected: *vid.* Ins. Apt., II, p. 55 (where *maculata* is a slip of the pen for *albimacula*). This species stands on the point of transition between *Epeira* and *Meta*, as I (On Eur. Spid., pp. 49, 50) determined the limits of these genera: in its general appearance it resembles a *Meta*, but in the form of the maxillæ it agrees with the genus *Epeira*. — *Meta albimacula* WESTR., under which C. KOCH's *Zilla albimacula* has been erroneously cited, is quite a different form, standing in close connexion with *Meta segmentata*, and ought to be called *Meta Mengii* (BLACKW.). See the "Additions and Corrections" to p. 40, *Meta albimacula* WESTR.

(Pag. 357.) *Epeira anthracina* [= *Singa pygmæa* (SUND.) 1830].

- Syn.*: 1861. SINGA HERII WESTR., Aran. Suec., p. 57.  
*Cet. Syn. vid. sup.*, p. 26 ("E. Herii BLACKW." *tamen incertum est syn.*).

The Rev. O. P. CAMBRIDGE, to whom I had sent a fullgrown Swedish ♂ of *Singa pygmæa*, has had the kindness to compare it

with BLACKWALL's type-specimens of *E. anthracina*, and has informed me that it exactly agrees with that species. As regards C. KOCH's *S. anthracina*<sup>1)</sup>, that author's figure and short description perfectly suit *S. pygmæa* (SUND.) ♂, to which BLACKWALL and I have referred it: according to our opinion, *S. anthracina* C. KOCH is not an independent species, but the male to *Singa trifasciata* C. KOCH or *S. pygmæa* ♀. AUSSERER<sup>2)</sup> however does not adopt this identification, but gives the name *S. anthracina* to another, very nearly allied species, which I suppose cannot with more probability than *E. anthracina* BLACKW. be proved to be the true *S. anthracina* C. KOCH. It is certainly best to drop that name, and to distinguish *S. anthracina* AUSS. by a new denomination: I propose to call it *S. Aussereri*.

AUSSERER describes loc. cit. as the male of *S. sanguinea* C. KOCH<sup>3)</sup> a spider, which, according to his account, differs from his *S. anthracina* or *S. Aussereri* N. ♂ by the bulbus having a very fine, rather long, slightly curved process a little below the great tooth, and by the colour of the abdomen being brownish red with dark sides: in *S. Aussereri* ♂ on the contrary the said process is stated to be absent, and the abdomen to be piceous, with *sometimes* a pale spot at the base, above. Dr L. KOCH has given me, under the name of "*S. sanguinea* ♂?" an adult male, which *has* the above-mentioned fine process on the bulbus, that according to AUSSERER distinguishes *S. sanguinea* ♂; and this specimen accordingly must belong to *S. sanguinea* AUSS., notwithstanding its brown abdomen having a short pale centre stripe at the base, as is stated to be sometimes the case in *S. Aussereri*. (The presence or absence of such a spot or stripe appears to be of no consequence). I have lately sent this male specimen to Mr CAMBRIDGE, who has also in England captured similar males, and who considers them to belong to *E. Herii* BLACKW., which he accordingly takes to be identical with *S. sanguinea*. This however appears to me but little probable: I possess a German female *Singa*, which unquestionably is the true *S. sanguinea* C. KOCH, and which is very different from BLACKWALL's figure of *E. Herii* and from English specimens of this species sent me by Mr CAMBRIDGE: the abdomen is reddish brown *with three yellowish spots in front*, one in the middle and one on each side, and *two large black spots*

1) Die Arachn., XI, p. 154, Tab. CCCXCIII, fig. 950.

2) Neue Radspinnen, in Verhandl. d. Zool.-bot. Gesellsch. in Wien, XXI, p. 825 (11).

3) Die Arachn., XI, p. 155, Tab. CCCXCIII, fig. 951.

towards the anus, one on each side; the area of the four centre eyes is somewhat broader behind than before. (Compare AUSSERER's description). Mr CAMBRIDGE, who has seen this specimen, thinks it is a variety of *E. Herii* BLACKW., which has normally three yellow longitudinal stripes on the abdomen, quite as *S. pygmæa* ♀. But neither C. KOCH nor AUSSERER appears to have seen a *S. sanguinea* ♀ with yellow stripes on the abdomen. The females of *E. Herii* BLACKW. I can only distinguish from *S. pygmæa* ♀ by their cephalothorax being of a more uniform reddish or yellowish brown colour, whereas in my Swedish and in most of my German specimens of *S. pygmæa* ♀ the cephalothorax is darker brown, its pars thoracica with broad yellowish margins. But according to AUSSERER again the cephalothorax in "*S. pygmæa* ♀" is of a uniform colour, varying from yellowish brown to black! If, as I believe, the colour of the cephalothorax in *S. pygmæa* ♀ varies in this manner, *E. Herii* BLACKW. — a female — is certainly but a *S. pygmæa* with the cephalothorax of one colour, without pale margins.

*S. sanguinea* AUSS. ♂ and *S. pygmæa* ♂ may be easily distinguished by the following marks. In *S. sanguinea* AUSS. ♂ the distance from the border of the clypeus to the anterior centre eyes is considerably greater than the length of the area of the centre eyes: the lamina has at its base, on the outer side, a stout, crooked, falciform process, which at its rounded apex is somewhat thickened. The bulbus forms on the middle of the side that is turned outwards a strong, sharp spine somewhat curved at the apex; on the inner side of this, nearer to the margin of the lamina, is perceived a very fine, almost straight spine. In *S. pygmæa* ♂ on the contrary the distance between the margin of the clypeus and the anterior centre eyes is at the utmost only equal to, not greater than, the length of the area of the centre eyes. The falciform process of the lamina bulbi is smaller than in *S. sanguinea* AUSS., scarcely thickened at the apex. The outer side of the bulbus is not extended into a strong sharp spine, but forms a short, broad and blunt protuberance, which at its apex is a little depressed or notched. At about the middle of the downward-turned side, the bulbus exhibits a fine, sharp-pointed, much curved spine, and immediately in front of this, another finer, pointed, somewhat curved spine, which often lies so close to the bulbus, that it cannot be perceived without great difficulty.

The bulbus in the real *S. Herii* (HAHN) closely resembles that of *S. pygmæa* (*E. anthracina* BLACKW., *S. Herii* WESTR.); but the

male of the former is very easily distinguished from that of the latter by the area of the centre eyes being a little, though very inconsiderably, *broader before* than behind, which is not the case in *S. pygmæa* ♂. The colour also is quite different in *S. Herii* ♂: the abdomen has a longitudinal reddish yellow centre band, the cephalothorax is brownish or reddish yellow, often (in both sexes) with the pars cephalica black (var. *nigrifrons*). For further particulars respecting *S. Herii* and *S. pygmæa*, vid. sup., p. 26. — Dr L. KOCH has kindly sent me adult examples of both sexes both of *S. Herii* (HAHN) and of *S. trifasciata* C. KOCH (= *S. pygmæa* (SUND.)).

AUSSERER states that in both ♂ and ♀ of *S. Herii* the eyes form a *trapezium*, whereas in the female of *S. nigrifrons* (the male of which is unknown to him) they form a *rectangle*. This difference between the females of the two forms I am not able to confirm: the area of the centre eyes in both appears to me as nearly as may be rectangular, only a hair's-breadth broader before than behind.

In the valuable view of the European species of the genus *Singa* which AUSSERER loc. cit. has published, he enumerates the following species: *S. hamata* (CLERCK), *S. nitidula* C. KOCH, *S. semiatra* L. KOCH (= *Ep. lucina* SAV. et AUD.?), *S. lauræ* SIM., *S. Herii* (HAHN), *S. amæna* (BLACKW.), *S. sanguinea* C. KOCH, *S. albobittata* WESTR., *S. pygmæa* (SUND.), "*S. anthracina* C. KOCH" (*S. Aussereri* THOR.) and *S. nigrifrons* C. KOCH. Concerning *S. nitidula* AUSSERER himself says, that, in consequence of the many transition-forms between it and *S. hamata*, the independence of the species is very uncertain. As I have already intimated, I cannot in *S. nigrifrons* see any thing but a variety of *S. Herii*. The rest are doubtless all good species.

(Pag. 361.) *Epeira bicornis* [= *Epeira arbustorum* C. KOCH 1837].

- Syn.*: †1802. ARANEA BICORNIS WALCK., Faune Par., II, p. 190.  
 1805. EPEIRA " ID., Tabl. d. Aran., p. 57.  
 182.. " " ID., Faune Franç., Arachn., Pl. 9, fig. 5.  
 1837. " ARBUSTORUM C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 3.  
 1845. " BICORNIS ID., Die Arachn., XI, p. 92, Tab. CCCLXXXII, figg. 902, 903.

The reason why the specific name *bicornis* ought not to be retained for this species, I have stated above, p. 21. — Mr EISEN has found a fullgrown ♀ of *E. bicornis* BLACKW., or *E. arbustorum*, at Öfveds Kloster in Skåne, which he has given to me; I have also

seen German specimens of both sexes from Münster in Vestphalia, sent me by Mr F. KARSCH. — *E. bicornis* WESTR. is a different species, which I (p. 19) have called *E. omæda*; *E. bicornis* MENGE is identical with *E. dromedaria* WALCK.: vid. sup., p. 20.

The very short and broad corpus vulvæ (conf. sup., p. 5) presents on each side a dark, rounded, shining protuberance, and is drawn out into a fine, rather short, backward-directed, blunt and yellowish scapus. For further particulars relative to this species see above under *E. bicornis* WESTR., pp. 19—21.

(Pag. 367.) **Tetragnatha extensa** [= *Tetragnatha extensa* (LINN.) 1758].

Forma *T. extensa* vera:

- Syn.*: 1758. ARANEA EXTENSA LINN., Syst. Nat., Ed. 10, I, p. 621.  
 1778. " " DE GEER, Mém., VII, p. 236, Pl. 19, figg. 1—4.  
 ?1805. TETRAGNATHA EXTENSA WALCK., Tabl. d. Aran., p. 68 (*ad part.*).  
 1833. " " SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl., 1832, p. 256 (*ad part.*).  
 1856. " " THOR., Rec. crit. Aran., p. 107.  
 1861. " " WESTR., Aran. Suec., p. 84.  
 1866. " " MENGE, Preuss. Spinn., I, p. 90, Pl. 15, tab. 26.  
 1870. " " THOR., Rem. on Syn., p. 40 (*ad part.*).  
 1870. " NOWICKII L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Galiz., p. 13, 15.

Forma *T. Solandri* (Scop.) 1763:

- Syn.*: 1763. ARANEA SOLANDRI SCOP., Ent. Carn., p. 397 (*salt. ad part.*).  
 ?1763. " MOUFFETI ID., ibid., p. 398 (= ♂).  
 1765. " EXTENSA STROM, Beskr. ov. Norske Ins., 1, in Det Trondhiemske Selsk. Skrift., III, p. 433 (*salt. ad part.*).  
 1805. TETRAGNATHA EXTENSA WALCK., Tabl. d. Aran., p. 68 (*ad part.*).  
 1833. " " SUND., Sv. Spindl. Beskr., loc. cit. (*ad part.*).  
 1834. " " HAHN, Die Arachn., II, p. 43, Tab. LVI, fig. 129 (*salt. ad part.*).  
 1841. " " WALCK., H. N. d. Ins. Apt., II, p. 203, (*ad part.*).  
 1870. " " THOR., Rem. on Syn., p. 40 (*ad part.*).  
 1870. " " L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Galiz., p. 15.

Forma *T. obtusa* C. KOCH 1837:

- Syn.*: ?1805. TETRAGNATHA EXTENSA WALCK., Tabl. d. Aran., p. 68 (*ad part.*).  
 ?1833. " " SUND., Sv. Spindl. Beskr., loc. cit. (*ad part.*).

1837. TETRAGNATHA OBTUSA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 5.  
 ?1837. " GIBBA ID., ibid.-  
 ?1847. " GIBBOSA WALCK., Sur une nouv. fam. du genre Tetragn., in Ann. de la Soc. Ent. de France, 2 Sér., V, Bull., p. LXIV.  
 1861. " OBTUSA WESTR., Aran. Suec., p. 86.  
 1866. " " MENGE, Preuss. Spinn., I, p. 39, Pl. 15, tab. 27.  
 1870. " EXTENSA THOR., Rem. on Syn., p. 40 (*ad part.*).  
 1870. " OBTUSA L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Galiz., p. 16.  
 ?1872. " GRÖENLANDICA THOR., Om några Arachn. fr. Grönl., in Vet.-Akad. Förhandl., XXIX (1872), p. 151.

I have already, pp. 41 and 42, expressed my opinion, that *T. obtusa* C. KOCH could not be considered as a different species from *T. extensa*, at least not on the strength of the characteristics appealed to by C. KOCH, WESTRING and MENGE. Since that time L. KOCH, in his work "Beiträge z. Kenntn. d. Arachn.-fauna Galiz.", has not only taken up *T. obtusa* as an independent species, but has from "*T. extensa*" separated two more species, "*T. Nowickii*" and "*T. pinicola*". These three forms differ, it is true, from each other in characteristics quite as good as those which distinguish *T. obtusa*; and if there were no transition-forms between them, I should be much more inclined to acknowledge the independence of all four forms than to separate *T. obtusa* only as a species distinct from *T. extensa*, if the other three forms are to be included under that name. (I united above, l. c., all four forms in question under the name *T. extensa*). *T. pinicola* appears to be the most distinct of these forms, and is perhaps a good species; but the other three are certainly nothing more than varieties of one and the same species, or perhaps rather "incipient species". — I cannot, I believe, do better than give in Dr L. KOCH's own words the characteristics whereby one can most readily distinguish full-grown individuals of the forms before us.

"In *T. extensa* the sternum is brownish yellow with a slight shade of black; the lateral eyes are situated nearer together than are the centre eyes: in the female the claw of the mandible has near the base a little tooth, in the male there appears in front of the great spine on the upper side a little protuberance. *Tetragnatha Nowickii* has the sternum black with a triangular yellow spot at the base: the lateral eyes of the two rows are as distant from each other as are the centre eyes, the claw of the mandibles in

the female has no tooth at the base, and in the male's mandibles there is neither a protuberance nor a tooth before the spine on the upper side. — *Tetragnatha pinicola* is a very small, pretty species, its sternum is black with a fine yellow longitudinal stripe; the lateral and centre eyes of the two rows are equally distant from each other, the male's mandibles are directed *downwards*, the spine on the upper side is not cloven at the apex, and in front of it there is neither a protuberance nor a tooth, and the claw on the female's mandibles has no tooth at the base. — *Tetragnatha obtusa* has a brownish yellow sternum with a shade of black, the centre eyes of the two rows are more distant from each other than are the lateral eyes. The abdomen on the upper side is ornamented with a darker leaf-like patch. On the tibiae of the first pair there are longer spines in a greater number (whereas in *T. pinicola* only few spines are observed, or there are none at all); in front of the spine on the upper side of the male's mandibles there is a conspicuous sharp tooth; the female's abdomen is short and thick and is highest arched towards the base of its length, and looks almost triangular, when viewed from the side — *Tetragnatha pinicola* and *obtusa* I have constantly observed only in dry dark woods, living on firs, whereas the others dwell on the banks of rivers and the margins of ponds, upon rushes, reeds, long grass and bushes". L. KOCH, loc. cit., pp. 15, 16.

*T. extensa* L. KOCH and *T. obtusa* on the one side are therefore easily distinguished from *T. Nowickii* and *T. pinicola* on the other by their *uniformly coloured sternum*. *T. pinicola* ♂ is distinguished by having the great spine on the upper side of the mandibles *pointed*, neither cloven at the apex nor emarginated, as in the other species. It will be probably sometimes difficult to distinguish the female of *T. pinicola* from *T. Nowickii* ♀ by any other token than its considerably smaller size: its cephalothorax is in the specimen I have seen only about half as long as that of moderately sized specimens of *T. Nowickii* ♀. The posterior row of eyes seems to me however evidently more curved backwards in *T. pinicola* than in *T. Nowickii*. The females of *T. extensa* L. KOCH and *T. obtusa* are sometimes very difficult to distinguish from one another, for also in *T. obscura* ♀ the claw of the mandibles has a short tooth at the base, and one cannot always from the colour and from the form of the abdomen determine which of these two "species" one has in hand.

The spines on the legs of *T. extensa* L. KOCH are very variable in length, sometimes long, as in *T. obtusa*, sometimes almost as

short as in *T. Nowickii* (conf. WESTRING's description). In *T. extensa* L. KOCH ♀ the extreme apex of the mandibles on the outer side usually forms a little protuberance or (in the specimens from the south of Europe) a short tooth, which appears not to be case in *T. obtusa* ♀. In *T. extensa* L. KOCH the eyes appear to be somewhat smaller than in *T. obtusa*, and the distance between the two anterior centre eyes is evidently greater than that between them and the posterior centre eyes, which is hardly, if at all, the case in *T. obtusa*. Not only in *T. extensa* L. KOCH and *T. obtusa*, but also in *T. Nowickii* the distance between the two lateral eyes on the same side seems to me something less than that between the anterior and posterior centre eyes.

Specimens are however not wanting, which it is difficult to include under either of L. KOCH's species, and which even may be considered as belonging to other species as good as those proposed by him. I possess two female specimens (Swedish), which by the colour of the sternum etc. belong to *T. Nowickii*, but in which the claw of the mandibles has a little blunt tooth or protuberance at the base, as in *T. extensa* L. KOCH ♀. In a Swedish male specimen in my collection the tooth on the anterior margin of the mandible's claw-furrow, which would correspond to the 1st little tooth (reckoning from the apex) in *T. extensa* L. KOCH ♂, is absent, though found in other specimens of *T. obtusa* ♂. This male forms a sort of transition to two other males (from Skåne), which I have received of Mr G. EISEN, and which by their dark colour, their uniformly coloured sternum and the absence of a protuberance in front of the spine on the upper side of the mandibles, show, that they cannot belong either to *T. Nowickii* or *T. extensa* L. KOCH, but which at the same time are *without* the sharp tooth in front of the spine on the upper side of the mandibles, that distinguishes *T. obtusa* ♂: the 1st tooth on the anterior margin of the claw-furrow is instead *larger* than in ordinary specimens of *T. obtusa* ♂ and *T. extensa* L. KOCH ♂, and is not quite in a line with the other teeth, but situated *something, though but little, higher up* towards the upper side of the mandible (not nearly so high as the protuberance in *T. extensa* L. KOCH or the tooth in *T. obtusa*). This form, which I cannot aggregate to any of L. KOCH's species, I call *T. dearmata*. — In another adult male, found by Mr EISEN at Harg in Upland, which in colour and marking, especially on the sternum, in size and in the armature of the mandibles most nearly approaches *T. Nowickii* ♂, the mandi-



bles are, as in *T. pinicola* ♂, almost vertical, but shorter and thicker, egg-shaped, and the large spine on the upper side of the mandibles has its extremity tapering and truncated, not dilated and cloven or emarginated at the apex, as in *T. Nowickii* ♂, nor brought to a point, as in *T. pinicola* ♂. (A female, taken in company with that male, seems to differ from *T. Nowickii* ♀ by a shorter and thicker abdomen and somewhat shorter legs.) This form may be distinguished by the appellation *T. brachygnatha*.

I have hitherto employed L. KOCH's nomenclature for the forms before us, but for two of them, *T. extensa* and *T. Nowickii*, it will be necessary to alter it. Among all the examples of the genus *Tetragnatha* which I have collected here at Upsala, the place where LINNÆUS resided, there is not a single one of *T. extensa* L. KOCH, which species seems to be totally absent from the northern provinces of Sweden. The form usually met with here is *T. Nowickii*. *T. extensa* THOR., Rec. crit. Aran., p. 107, includes only *T. Nowickii* (and *T. obtusa*). It is further to be observed that WESTRING's *T. extensa* is identical with *T. Nowickii*, and does not include *T. extensa* L. KOCH, according to the information communicated to me in reply to my inquiries by WESTRING himself. *T. extensa* SUND. is certainly *ad max. part.* = *T. Nowickii*, for even of the numerous specimens examined by me, which were collected in different parts of the most southerly province of Sweden, Skåne, the greatest part belong to *T. Nowickii*. As therefore it is not probable that LINNÆUS was acquainted with *T. extensa* L. KOCH, but undoubtedly in the first place by his *T. extensa* meant *T. Nowickii* L. KOCH, and as also other Swedish arachnologists have, either exclusively or principally, by the name of *T. extensa* (LINN.) designated *T. Nowickii* I conceive that I ought to restore the Linnean specific name *extensa* to that form. *T. extensa* MENGE, at least the male (fig. A), is also probably identical with *T. Nowickii*; the *Ar.* or *Tetr. extensa* of sundry other writers, as for example FABRICIUS, ought in all probability in the first place to be classed under the same form.

As I wish to avoid increasing the number of synonyms to *T. extensa* L. KOCH with a new name, I accept for that form the name *T. Solandri* (SCOP.) 1763. That SCOPOLI's *Ar. Solandri* at least principally indicates that form of the genus *Tetragnatha* which is commonest in central and southern Europe, i. e. *T. extensa* L. KOCH, and not that which is most frequently met with in Scandinavia, there seems to

me no reason to doubt. *Ar. Mouffetii* Scop. is probably the male to *Ar. Solandri* Scop.

Mr CAMBRIDGE has been kind enough to inform me, that in England the most common form is *T. extensa* L. KOCH, but that *T. obscura* MENGE occurs there also. BLACKWALL'S figures appear to me indeed to represent these two forms: fig. 265 *a* and *c*, *T. Solandri*; fig. *b* and *d*, *T. obscura*. The true *T. extensa* or *T. Nowickii* L. KOCH can scarcely be wanting in England: Mr CAMBRIDGE, to whom I sent a couple of that form, says that he cannot distinguish them from *T. extensa* L. KOCH or *T. Solandri*.

Of *T. Solandri* I have specimens from Italy, Germany and the more southerly and westerly parts of Sweden (Skåne, Småland, Bohuslän). Of *T. pinicola* I captured a couple of specimens at Sättra in Westmanland, and I also possess a ♂ *ad.* from Nürnberg, furnished me by the kindness of Dr L. KOCH. *T. extensa* (LINN.) or *T. Nowickii* L. KOCH seems to be common over the whole of Scandinavia. Dr KOCH has favoured me with a few specimens of this form also (from Galizia). Similarly *T. obtusa* seems to be met with throughout all Sweden, from Skåne to Lappland; I have also specimens of it from Austria, which I have received through the kindness of Mr L. v. KEMPELEN. I suppose that, when adult specimens of *T. grænländia* THOR. shall be found, this spider will appear to belong to *T. obtusa*, or at least to be most nearly allied with that form.

The "*T. extensa*" of some among the above-cited authors, for ex. WALCKENAER, no doubt includes, besides *T. Solandri*, one or more of the other forms; but accurately to define which of them, is what I dare not attempt to do. — It appears to me dubious, whether *Tetr. rubra* RISSO <sup>1)</sup>, which WALCKENAER takes up under his *T. extensa* (Ins. Apt., II, p. 205), ought really to be classed under any of the forms before us. — "*Eugnathe chrysochlore* SAV." <sup>2)</sup>, which WALCKENAER also cites, is according to AUDOUIN an "espèce inédite", which had not either been described or figured. In Ins. Apt., IV, p. 478, WALCKENAER gives the name *Tetragnatha chrysochlora* to very young specimens of a *Tetragnatha* from the vicinity of Paris. — As regards *T. striata* L. KOCH, vid. sup., p. 42.

1) H. N. d. princip. prod. de l'Eur. mérid., V, p. 168.

2) SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Ed., XXII, p. 324.

(Pag. 370.) *Dysdera erythrina* [= *Dysdera Cambridgii* N.].

|               |                   |                                                                                                                                               |
|---------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Syn.: †?1831. | DYSDERA ERYTHRINA | HAHN, Die Arachn., I, p. 7, Tab. I, fig. 3.                                                                                                   |
| 1839.         | " "               | C. KOCH, ibid., V, p. 76, Tab. CLXV, fig. 389.                                                                                                |
| 1853.         | " "               | DOBŁIKA, Beitr. z. ein. Monogr. d. ... <i>Dysdera</i> ,<br>in Verhandl. d. zool.-bot. Gesellsch. in Wien,<br>III, p. 117 ( <i>ad part.</i> ). |
| †1870.        | " PUNCTORIA       | THOR., On Eur. Spid., p. 157.                                                                                                                 |
| †1872.        | " RUBICUNDA       | MENGE, Preuss. Spinn., V, p. 297, Pl. 54,<br>tab. 171.                                                                                        |

*Ar.* or *Dysdera erythrina* WALCK.<sup>1)</sup> is certainly not the same spider as BLACKWALL'S (and C. KOCH'S) *D. erythrina*, as may be easily seen from WALCKENAER'S description of the male's bulbus genitalis. *D. erythrina* DUF.<sup>2)</sup> must, judging from the description and figure of the bulbus genitalis of the male<sup>3)</sup>, be a different species both from *D. erythrina* WALCK. and *D. erythrina* BLACKW. In several authors, f. inst. DOBŁIKA, *D. erythrina* is evidently a collective name for two or more different species. — For *D. erythrina* BLACKW., which no doubt is identical with *D. rubicunda* MENGE, I propose the name *D. Cam-*

1) *Ar. erythrina* WALCK., Faune Par., II, p. 224; *D. erythrina* ID., Tabl. d. Aran., p. 47. — In Faune Franç., Arachn., p. 184, WALCKENAER describes the genital bulb of *D. erythrina* in the following words: "le dernier article [du palpe]...; dans son milieu se trouve articulée sur un court pédicule une pièce ovale, rougeâtre, qui s'en détache à angle droit. Cette pièce est globuleuse à sa base. Du fond de cette capsule ovoïde, qui est bordée d'une raie fine, d'un rouge brun à son extrémité, et entourée d'une double bande, plus brune dans son milieu et à sa base, sort une autre pièce en cône, allongée, pointue, recourbée d'un rouge plus pâle, et percée à son extrémité: c'est l'organe copulateur. Il a sur le côté interne, ou qui fait face à l'extrémité du troisième article, quand le palpe est recourbé, une petite apophyse que commence la courbure de l'extrémité de l'organe, qui est jaunâtre, avec deux raies rougeâtres parallèles longitudinales. La surface de la capsule se prolonge jusqu'à l'apophyse de l'organe; elle le laisse plus à découvert du côté opposé, et l'apophyse forme avec cette capsule un demi-cercle rentrant ou une forte échancrure arrondie; ce qui a fait dire que cet organe était à deux crochets: mais l'un des deux est beaucoup plus allongé que l'autre". Of the legs WALCKENAER says that they are "glabres, et n'ayant que des poils rares et des piquants courts aux derniers articles".

2) Observ. sur quelques Arachn. quadripulm., in Ann. gén. d. Sc. phys., V, p. 114, Tab. LXXXIII, fig. 7.

3) "Génital elliptique, fixé par un pédicule très-court, se prolongeant en un bec bifide, qui, à sa naissance, est armé d'un crochet en hameçon". DUF., loc. cit., p. 113, Pl. LXXXIII, fig. 7, e.

*bridgii*. — *Ar. punctoria* VILL. 1789<sup>1)</sup> is probably a separate, more southern species.

The Rev. Mr CAMBRIDGE has kindly lent me the type-specimen, a ♂ *ad.*, of *D. rubicunda* BLACKW., and informs me that he has received an Italian specimen of it from Dr L. KOCH under the name of *D. crocota* C. KOCH: as C. KOCH's description of *D. crocota* suits it very well, and Dr KOCH possesses the type-specimens of *D. crocota*, there can be no doubt of the correctness of this identification. *D. crocota* is very closely allied to a species from Algeria, of which I received one male and two females of Mr H. A. EURÉN, who had captured them at Maison Carrée. This last-mentioned species, which may be called *D. maurusia*, must, like *D. crocota*, be very nearly allied to *D. lata* REUSS<sup>2)</sup> from Egypt: it was probably one of these species, and not *D. erythrina*, which FABRICIUS<sup>3)</sup> called *Ar. rufipes*, in the erroneous belief that it was identical with *Ar. rufipes* LINN. — With the real *D. rubicunda* C. KOCH, which is different both from *D. rubicunda* BLACKW. and *D. rubicunda* MENGE, and of which I have been favoured by Dr L. KOCH with a ♂ and ♀ *ad.*, *D. grisea* CANESTR.<sup>4)</sup> is perhaps identical.

Of *D. erythrina* BLACKW. or *D. Cambridgii* N. I have collected numerous specimens, amongst which are two full-grown males, in Germany, at Pymont and Kissingen, and Mr CAMBRIDGE has obliged me with a ♂ *ad.* from England.

*D. erythrina* WALCK. is unknown to me. The four other species here mentioned are certainly very like each other both in colour and form, but sure marks whereby they may easily be distinguished, are not wanting. A few of the most important may be here signalized.

*D. Cambridgii*. — The breadth of the clypeus at the utmost does not exceed the length of the tibiæ of the 1st pair; the interval between the two anterior eyes is at least as great as the diameter of

1) DE VILLERS, LINN. Entom., IV, p. 128; Nomencl. Ic. Entom. Linn., Tab. XI, fig. 9.

2) I should have adopted the name *D. lata* for my *D. maurusia*, had not Mr CAMBRIDGE informed me that he had captured another, very nearly allied species in Egypt, to which the name *D. lata* REUSS perhaps rightly belongs.

3) Entom. Syst., II, p. 426.

4) Nuovi Aracn. Ital., in Annuario della Soc. d. Naturalisti in Modena, III, p. 191; CANESTR. e PAVESI, Catal. sinon. degli Aran. Ital., in Archiv. per la Zool. etc., p. 5, Tav. III, fig. 3.

those eyes. *All the thighs are destitute of spines*, and only the two posterior legs are on the tibiæ and metatarsi armed with a somewhat variable number of spines. The female's vulva is composed of two small, dark, not very distinct, spot-like, rounded foveæ. The pear- or club-like, at the posterior side of the base tumid bulbus tapers pretty rapidly from the middle, being continued into a much narrower, almost linear portion or *shaft*: its compressed apex is obliquely rounded, and provided with a projecting margin or brim, which extends from the outer round about the inner angle and extends right across the apex obliquely upwards and outwards to the outer side. In the outer corner of the apex a very small, fine, crooked spine is perceived (much shorter than the breadth of the apex); at the inner corner there seems to lie a fine, curved, black spine under the dilated margin (?). At the outer side, just where the bulbus begins to taper, there is a strong, slightly upward-curved tooth, which at the base on the upper side carries another very small tooth.

*D. maurusia*. — The cephalothorax is shorter and broader than in *D. Cambridgii* and *D. rubicunda*: the breadth of the clypeus in ♂ is about *as great as*, in ♀ *considerably greater than* the length of the tibia of the 1:st pair. The interval between the two anterior eyes is about *equal* to the diameter of those eyes. Excepting on the tibiæ and metatarsi of the two posterior pairs, the legs have spines on the *thighs of the 4:th pair only*: these thighs have above, immediately at the base, two closely contiguous, short spines, and, at least in the male, also 1—3 more spines above. The vulva consists of a narrow, transversal, backward-curved, brown area, in which are situated two oval, obliquely posited foveæ. The form of the bulbus is very peculiar: on the outer side, *above* the middle of its length, it tapers suddenly, and has there a little protuberance or short tooth; the "shaft" is longer than in *D. Cambridgii*, and not straight as in that species, but *broken at an obtuse angle*; the basal part of the shaft is somewhat longer than it is broad, tapering a little downwards, the inferior part or continuation is considerably narrower than, but about as long as, the basal part, somewhat dilated towards the apex; from the outward turned corner of the shaft there issues in an opposite direction from and in an almost straight line with its inferior part, a coarse and strong, blunt process or heel which is slightly narrower than this part. In the apex itself are perceived two curved divergent spines, one in each corner; they are considerably shorter than in *D. rubicunda* C. Koch, not so long as the breath of the apex of the bulbus.

*D. crocota* (*rubicunda* BLACKW.). — The only specimen of this species that I have seen, an adult ♂, is very much injured: of the spine-armature of the legs I cannot say anything with certainty: the thighs seem however to have been destitute of spines (?). The cephalothorax is broad in front, as in *D. maurusia*; the breadth of the clypeus is equal to the length of the tibia of the 4th pair. The mandibles are longer than in *D. maurusia*, longer than the breadth of the clypeus (in *D. maurusia* the mandibles are not so long as the clypeus is broad). The distance between the two anterior centre eyes is fully as long as the diameter of these eyes. The bulbus is very like that of *D. maurusia*; it is rather suddenly narrowed on the anterior and exterior sides, a little *below* the middle: its *basal* half is almost oval, and has at the inner side of the apex (just above the commencement of the "shaft") a little protuberance. The superior part or basis of the shaft is very broad and strong, not longer than it is broad, and divides into two branches which are double as narrow as the basis: one of these branches is longer, of about uniform breadth, directed inwards and backwards, and forms an obtuse angle with the basis of the shaft; the other is short, pointing in the opposite direction, rounded on the under side, or even curved a little upwards: these two branches are separated by a very distinct notch below. I have not been able to see any spines at the apex of the longer branch in this species, as in *D. maurusia*.

*D. rubicunda* C. KOCH. — The breadth of the clypeus is *considerably less* than the length of the tibia of the first pair; the interval between the two anterior eyes does not exceed *half* the diameter of those eyes. Besides upon the posterior tibiae and metatarsi, the legs are armed with several spines (which vary pretty largely in number) *on all the thighs*; the posterior thighs have the spines on the upper part, the anterior thighs on the fore side, towards the apex; the thighs of the 1st pair are on the inner side towards the apex, where the spines are situated, somewhat thickened. (The vulva in my specimen is indistinct). The bulbus is smooth and shining, and has on the whole the same form as in *D. Cambridgiæ*, but it has no tooth on the side, and is considerably shorter than in that species: *the shaft* (end) is *scarcely longer than it is broad*. In the middle of the obliquely rounded apex the bulbus carries a strong, crooked and at the thin end truncated spine, which is *longer than the apex of the bulbus is broad*, and, a little in front of this, on the inner (fore) side, just at the base of the short shaft, it has a somewhat longer, pointed spine curved towards the former spine.

(Pag. 371.) **Dysdera rubicunda** [= *Dysdera crocota* C. KOCH 1839].

- Syn.*: 1839. DYSDERA CROCOTA C. KOCH, Die Arachn., V, p. 81, Tab. CLXVI, figg. 392—394.  
 †1843. " RUBICUNDA BLACKW., A Catal., *cet.*, in Transact. of the Linn. Soc., XIX, p. 262 (*sec.* Spid. of Gr. Brit.).  
 1870. " " CAMBR., Notes on some Spid. and Scorp. fr. St Helena, in Proceed. of the Zool. Soc., 1869, p. 532<sup>1)</sup>.

See the preceding species, *D. erythrina* BLACKW.

(Pag. 373.) **Segestria perfida** [= *Segestria florentina* (ROSSI) 1790].

- Syn.*: 1790. ARANEA FLORENTINA ROSSI, Fauna Etr., II, p. 133, Tab. IX, fig. 3.  
 1802. " PERFIDA WALCK., Faune Par., II, p. 223.  
 1804. " CELLARIA LATR., H. N. d. Crust. et d. Ins., VII, p. 217.  
 1805. SEGESTRIA PERFIDA WALCK., Tabl.-d. Aran., p. 48.  
 1806. " CELLARIA LATR., Gen. Crust. et Ins., I, p. 88.  
 1825. " PERFIDA WALCK., Faune Franç., Arachn., p. 197, Pl. 8, fig. 5.  
 1831. " FLORENTINA HAHN, Die Arachn., I, p. 5, Tab. I, fig. 1.  
 1839. " " C. KOCH, *ibid.*, V, p. 72, Tab. CLXIV, figg. 385—387.

(Pag. 377.) **Oonops pulcher** [= *Oonops pulcher* TEMPLET. 1834].

- Syn.*: 1834. OONOPS PULCHER TEMPL., On the Spid. of the gen. Dysdera, in Zool. Journ., V, p. 404, Pl. 17, fig. 10.  
 1837. DELETRIX EXILIS BLACKW., Charact. of a new gen., *cet.*, in Lond. and Edinb. Phil. Mag., 3<sup>rd</sup> Ser., X, p. 100.  
 1847. DYSDERA PULCHRA WALCK., H. N. d. Ins. Apt., IV, p. 382.  
 1870. OONOPS PULCHER THOR., On Eur. Spid., p. 158.

(Pag. 380.) **Scytodes thoracica** [= *Scytodes thoracica* LATR. 1804].

- Syn.*: 1804. ARANEA (SCYTODES) THORACICA LATR., Tabl. méth. d. Ins., in Nouv. Dict. d'Hist. Nat., XXIV, p. 134.  
 1805. SCYTODES THORACICA WALCK., Tabl. d. Aran., p. 79.  
 1806. " " LATR., Gen. Crust. et Ins., I, p. 99.  
 1839. " TIGRINA C. KOCH, Die Arachn., V, p. 87, Tab. CLXVII, fig. 398.  
 1845. " THORACICA LUC., Explor. d. l'Algér., Anim. Artic., I, p. 104, Pl. 2, fig. 3.

1) According to a communication from Mr CAMBRIDGE.

1850. SCYTODES CAMERATUS HENTZ, Descr. and fig. of the Aran. of the U. S., in Bost. Journ. of Nat. Hist., VI, p. 35, Pl. IV, fig. 17.
1854.       "       THORACICUS THOR., Om hanen af Scyt. thor., in Öfvers. af Vet.-Akad. Förhandl., XI (1854), p. 197 (= ♂).

BLACKWALL, like so many other writers, states, that "the male of *S. thoracica* has not yet been discovered"; but this is far from being the case. *Very young* males are as early as 1820 mentioned by DUFOUR<sup>1)</sup>; in 1853 I found a *fully developed* male specimen at Florence, and described it the following year loc. cit.<sup>2)</sup>. In the year 1861 I captured another full-grown male at Nice, which I sent to Mr H. LUCAS. The species of *Scytodes* met with in the Isle of Réunion, which VINSON<sup>3)</sup> has described 1863 under the name of *S. thoracica*, is an entirely different species, as is evident from, among other circumstances, the description of the male, in which the thighs of the 1:st pair are said to be armed with *two rows of strong, short spines*: this is by no means the case in *S. thoracica* ♂, the legs of which are clothed only with fine hairs, as is the case also in the female. SIMON<sup>4)</sup> has supposed this VINSON's spider to be a variety of *S. thoracica*, and calls it *S. thoracica* Var. *major*; it may therefore be denominated *Scytodes major* SIM.

*S. thoracica* is met with not only in the countries surrounding the Mediterranean, but also in the south-eastern parts of Africa, according to BLACKWALL<sup>5)</sup>. If, as I suspect, *S. cameratus* HENTZ be not specifically different from *S. thoracica*, this species is also found in North-America (Alabama).

1) Descr. de cinq Arachn. nouv., in Ann. gén. des Sc. phys., V, p. 203.

2) From this description I cite the following lines: "Palpi thoracis fere longitudine, vix attenuati; pars femoralis crassitudine femoris anterioris et hac crassitudine triplo longior; pars patellaris parva, brevis, sub-pyramidalis; pars tibialis crassitudine duplo longior, cylindrica; pars tarsalis basi globosa, in processum satis longum, acuminatum, fusco-pilosum producta: huic parti subtus affixus est bulbus globosus vel sub-pyriformis, processu satis longo, versus apicem paullo dilatato, ibique abrupte angustato et in setam longissimam (1 millim. longiorem) exeunte".

3) Aran. d. Iles de la Réunion, Maur. et Madag., p. 6, Pl. I, figg. a, b.

4) H. N. d. Araignées, p. 46.

5) A list of Spid. captured in the south-east region of Equat. Africa, in Ann. and Mag. of Nat. Hist., 3 Ser., XVIII, p. 463 (18).



**List of the Spiders described and figured in BLACKWALL'S 'History of the Spiders of Great Britain and Ireland'.**

- (Pag. 13.) MYGALIDÆ [= Subordo **Territelariæ**, Fam. **Theraphosoidæ**].

See THOR., On European Spiders, pp. 160—164.

- (Pag. 14.) ATYPUS [= *Atypus* LATR. 1804].

See THOR., On Eur. Spid., pp. 164, 165.

- (Pag. 14.) *Atypus Sulzeri* [= *Atypus affinis* EICHW. 1830 + *Atypus piceus* (SULZ.) 1776].

Syn., cetera, vid. sup., p. 415.

- (Pag. 16.) LYCOSIDÆ [= Subordo **Citigradæ**, Fam. **Lycosoidæ** + Fam. **Oxyopoidæ**, + Subordo **Tubitelariæ**, Fam. **Drassoidæ ad part.**].

See THOR., On Eur. Spid., pp. 187—189; 137—140.

- (Pag. 16.) LYCOSA [= *Lycosa* (LATR.) 1804 + *Tarantula* (SUND.) 1833 + *Trochosa* (C. KOCH) 1848 + *Pirata* SUND. 1833].

See THOR., On Eur. Spid., pp. 189—194.

- (Pag. 17.) *Lycosa agretyca* [= *Trochosa terricola* THOR. 1856].

Syn.: 1861. *Lycosa terricola* WESTR., Aran. Suec., p. 529; cet. vid. sup., p. 339.

- (Pag. 18.) *Lycosa campestris* [= *Trochosa ruricola* (DE GEER) 1778].

Syn.: 1861. *Lycosa ruricola* WESTR., l. c., p. 526; cet. vid. sup., p. 336.

- (Pag. 20.) *Lycosa andrenivora* [= *Tarentula andrenivora* (WALCK.) 1825, Var.].

Syn.: 1861. *Lycosa barbipes* WESTR., p. 511; cet. vid. sup., p. 318, 319.

- (Pag. 21.) *Lycosa rapax* [= *Tarentula pulverulenta* (CLERCK) 1757].

Syn.: 1861. *Lycosa pulverulenta* WESTR., p. 519; cet. vid. sup., p. 328.

- (Pag. 22.) *Lycosa herbigrada* [= *Lycosa herbigrada* BLACKW. 1857].

Syn.: 1861. *Lycosa albo-limbata* WESTR., p. 482; cet. vid. sup., p. 282.

- (Pag. 23.) *Lycosa allodroma* [= *Trochosa cinerea* (FABR.) 1793].

Syn.: 1861. *Lycosa cinerea* WESTR., p. 523; cet. vid. sup., p. 332.

- (Pag. 25.) *Lycosa picta* [= *Trochosa picta* (HAHN) 1831].

Syn.: 1861. *Lycosa picta* WESTR., p. 525; cet. vid. sup., p. 335.

- (Pag. 26.) *Lycosa saccata* [= *Lycosa amentata* (CLERCK) 1757].

Syn.: 1861. *Lycosa amentata* WESTR., p. 496; cet. vid. sup., p. 298.

- (Pag. 27.) *Lycosa lugubris* [= *Lycosa lugubris* WALCK. 1802].  
Syn.: 1861. *Lycosa silvicola* WESTR., p. 474; cet. vid. sup., p. 276.
- (Pag. 28.) *Lycosa obscura* [= *Lycosa pullata* (CLERCK) 1757].  
Syn.: 1861. *Lycosa pullata* WESTR., p. 501; cet. vid. sup., pp. 305, 306.
- (Pag. 29.) *Lycosa exigua* [= *Lycosa palustris* (LINN.) 1758].  
Syn.: 1861. *Lycosa tarsalis* WESTR., p. 490; cet. vid. sup., pp. 288, 289.
- (Pag. 31.) *Lycosa fluviatilis* [= *Lycosa agricola* THOR. 1856].  
Syn.: 1861. *Lycosa arenaria* WESTR., p. 476 (salt. ♀); cet. vid. sup., p. 278 et sequ., et *Add. et Corr.* in pag. illam.
- (Pag. 32.) *Lycosa cambrica* [= *Pirata leopardus* (SUND.) 1833].  
Syn.: 1861. *Lycosa leopardus* WESTR., p. 522; cet. vid. sup., p. 331.
- (Pag. 33.) *Lycosa latitans* [= *Pirata latitans* (BLACKW.) 1841].  
Vid. sup., p. 419.
- (Pag. 34.) *Lycosa piratica* [= *Pirata piraticus* (CLERCK) 1757].  
Syn.: 1861. *Lycosa piratica* WESTR., p. 532; cet. vid. sup., p. 341.
- (Pag. 36.) *Lycosa piscatoria* [= *Pirata hydrophilus* THOR. 1872].  
Vid. sup., p. 419.
- (Pag. 37.) DOLOMEDES [= *Ocyale* SAV. et AUD. 1825—27 + *Dolomedes* (LATR.) 1804].  
Vid. THOR., On Eur. Spid., p. 194.
- (Pag. 37.) *Dolomedes mirabilis* [= *Ocyale mirabilis* (CLERCK) 1757].  
Syn.: 1861. *Ocyale mirabilis* WESTR., p. 537; cet. vid. sup., pp. 349, 350.
- (Pag. 39.) *Dolomedes ornatus* [= *Dolomedes fimbriatus* (CLERCK) 1757, *Var.*].  
Syn.: 1861. *Dolomedes fimbriatus* WESTR., p. 535; c. v. s., pp. 346, 347.
- (Pag. 40.) *Dolomedes fimbriatus* [= *Dolomedes fimbriatus* (CLERCK) 1757].  
Syn.: 1861. *Dolomedes fimbriatus* WESTR., p. 535; c. v. s., pp. 346, 347.
- (Pag. 41.) HECAERGE [= *Zora* C. KOCH 1848].  
Vid. THOR., On Eur. Spid., p. 140.
- (Pag. 41.) *Hecaerge spinimana* [= *Zora maculata* (BLACKW.) 1833].  
Syn.: 1861. *Zora spinimana* WESTR., p. 325; cet. vid. sup., p. 168.
- (Pag. 43.) SPHASUS [= *Oxyopes* LATR. 1804].  
Vid. THOR., On Eur. Spid., pp. 196, 197.
- (Pag. 43.) *Sphasus lineatus* [= *Oxyopes lineatus* LATR. 1806].  
Vid. sup., p. 420.

(Pag. 45.) SALTICIDÆ [= Subordo **Saltigradæ**, Fam. **Eresoidæ** + Fam. **Attoidæ**].

Vid. THOR., On Eur. Spid., pp. 198, 199; 203—208.

(Pag. 45.) ERESUS [= *Eresus* WALCK. 1805].

See THOR., On Eur. Spid., p. 200.

(Pag. 46.) *Eresus cinnabarinus* [= *Eresus cinnabarinus* (OLIV.) 1789].

Vid. sup., p. 420.

(Pag. 47.) SALTICUS [= *Epiblemum* (HENTZ) 1832 + *Attus* (WALCK.) 1805 + *Euophrys* (C. KOCH) 1835 + *Ballus* C. KOCH 1850 + *Yllenus* (SIM.) 1868 + *Heliophanus* C. KOCH 1833 + *Marpessa* (C. KOCH) 1846 + *Salticus* (LATR.) 1804].

On these genera see THOR., On Eur. Spid., pp. 206—220; on *Yllenus* see also above, p. 355; on *Epiblemum* see the "Add. and Corr." to p. 359, at the end of this volume.

(Pag. 47.) *Salticus scenicus* [= *Epiblemum scenicum* (CLERCK) 1757].

Syn.: 1861. *Attus histrionicus* WESTR., p. 545; cet. vid. sup., p. 360.

(Pag. 49.) *Salticus sparsus* [= *Attus pubescens* (FABR.) 1775].

Syn.: 1861. *Attus pubescens* WESTR., p. 561; cet. vid. sup., p. 381.

(Pag. 50.) *Salticus coronatus* [= *Attus falcatus* (CLERCK) 1757].

Syn.: 1861. *Attus falcatus* WESTR., p. 578; cet. vid. sup., p. 394.

(Pag. 51.) \**Salticus xanthogramma* [= *Attus* (?) *inc. spec.*].

Vid. sup., p. 422.

(Pag. 52.) *Salticus frontalis* [= *Euophrys frontalis* (WALCK.) 1802].

Syn.: 1861. *Attus striolatus* WESTR., p. 591; *A. frontalis* ID., p. 587 (*ad part.*: ♂); cet. vid. sup., p. 404.

(Pag. 53.) *Salticus obscurus* [= *Ballus depressus* (WALCK.) 1802].

Syn.: 1861. *Attus brevipes* WESTR., p. 552; cet. vid. sup., pp. 370, 371.

(Pag. 54.) *Salticus distinctus* [= *Attus erraticus* WALCK. 1825].

Syn.: 1861. *Attus tigrinus* WESTR., p. 580; cet. vid. sup., p. 396.

(Pag. 55.) *Salticus floricola* [= *Yllenus saltator* (SIM.) 1869].

Vid. sup., p. 422.

(Pag. 56.) \**Salticus gracilis* [= *Attus* (?) *inc. spec.*].

Vid. sup., p. 397.

(Pag. 57.) *Salticus cupreus* [= *Heliophanus cupreus* (WALCK.) 1802 + *Heliophanus flavipes* (HAHN) 1831].

*H. cupreus*:

Syn.: 1861. *Attus cupreus* WESTR., p. 584; cet. vid. sup., p. 399.

*H. flavipes:*

Syn.: 1861. *Attus flavipes* WESTR., p. 585; cet. vid. sup., p. 402.

(Pag. 58.) \**Salticus notatus* [= *Attus* (?) *notatus* (BLACKW.) 1852<sup>1</sup>].

(Pag. 59.) \**Salticus promptus* [= *Euophrys prompta* (BLACKW.) 1854].  
Vid. sup., p. 423.

(Pag. 60.) *Salticus reticulatus* [= *Euophrys reticulata* (BLACKW.) 1853].  
Syn.: 1861. *Attus frontalis* WESTR., p. 587 (*ad part.*: ♀); c. v. s., p. 404.

(Pag. 61.) \**Salticus Jenynsii* [= *Marpessa* (?) *Jenynsii* (BLACKW.) 1854].  
Vid. sup., p. 423.

(Pag. 62.) \**Salticus Blackwallii* [= *Marpessa Blackwallii* (CLARK) 1855].

Vid. sup., p. 423.

(Pag. 63.) *Salticus tardigradus* [= *Marpessa muscosa* (CLERCK) 1757].  
Syn.: 1861. *Attus muscosus* WESTR., p. 549; cet. vid. sup., pp. 367, 368.

(Pag. 64.) *Salticus formicarius* [= *Salticus formicarius* (DE GEER) 1778].  
Syn.: 1861. *Salticus formicarius* WESTR., p. 542; cet. vid. sup., p. 357.

(Pag. 66.) THOMISIDÆ [= Subordo **Laterigradæ**, Fam. **Thomisoidæ**].

Vid. THOR., On Eur. Spid., pp. 169—172.

(Pag. 66.) THOMISUS [= *Xysticus* (C. KOCH) 1835 + *Diæa* THOR. 1869 + *Misumena* (LATR.) 1804 + *Thomisus* (WALCK.) 1805].

See THOR., On Eur. Spid., pp. 37, 174, 175, 181—187.

(Pag. 67.) \**Thomisus brevipes* [= *Xysticus inc. spec.*].  
Vid. sup., p. 427.

(Pag. 68.) *Thomisus cristatus* [= *Xysticus cristatus* (CLERCK) 1757].  
Syn.: 1861. *Thomisus cristatus* WESTR., p. 418 (♀; ♂ *ad part.*); cet. vid. sup., p. 236; conf. p. 424.

(Pag. 70.) *Thomisus audax* [= *Xysticus pini* (HAHN) 1831].  
Vid. sup., p. 424.

(Pag. 71.) *Thomisus erraticus* [= *Xysticus erraticus* (BLACKW.) 1834].  
Syn.: 1861. *Thomisus ulmi* WESTR., p. 426 (♂ *ad part.*); cet. vid. sup., p. 246.

(Pag. 72.) *Thomisus sabulosus* [= *Xysticus sabulosus* (HAHN) 1831].  
Syn.: 1861. *Thomisus sabulosus* WESTR., p. 430; cet. vid. sup., p. 249.

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1) *Salt. notatus* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., X, p. 94.

- (Pag. 74.) *Thomisus atomarius* [= *Xysticus atomarius* (PANZ.) 1801?].  
Vid. sup., pp. 252, 253, 426.
- (Pag. 74.) \**Thomisus cinereus* [= *Xysticus inc. spec.*].  
Vid. sup., pp. 239, 425.
- (Pag. 75.) \**Thomisus formosus* [= *Diæa* (?) *formosa* (BLACKW.) 1850<sup>1</sup>].
- (Pag. 76.) *Thomisus floricolens* [= *Diæa dorsata* (FABR.) 1777].  
Syn.: 1861. *Thomisus dorsatus* WESTR., p. 434; cet. vid. sup., p. 252.
- (Pag. 78.) *Thomisus luctuosus* [= *Xysticus luctuosus* (BLACKW.) 1836].  
Syn.: 1861. *Thomisus audax* WESTR., p. 422 (*ad part.*: "♂ et *Var. b*");  
cet. vid. sup., p. 243.
- (Pag. 79.) *Thomisus bifasciatus* [= *Xysticus bifasciatus* C. KOCH 1837].  
Syn.: 1861. *Thomisus bifasciatus* WESTR., p. 414; cet. vid. sup., p. 234.
- (Pag. 81.) \**Thomisus Cambridgii* [= *Xysticus Cambridgii* (BLACKW.) 1858].  
Vid. sup., p. 425, et *Add. et Corr.* in pag. illam.
- (Pag. 82.) *Thomisus pallidus* [= *Xysticus horticola* C. KOCH 1837].  
Vid. sup., p. 426.
- (Pag. 83.) *Thomisus versutus* [= *Xysticus atomarius* (PANZ.) 1801].  
Vid. sup., pp. 252, 426.
- (Pag. 84.) \**Thomisus trux* [= *Xysticus trux* (BLACKW.) 1846<sup>2</sup>].
- (Pag. 86.) *Thomisus incertus* [= *Xysticus praticola* C. KOCH 1837].  
Vid. sup., pp. 255, 426, et *Add. et Corr.* in pag. 254.
- (Pag. 87.) *Thomisus claveatus* [= *Xysticus claveatus* (BLACKW.) 1861].  
Vid. sup., pp. 257, 258.
- (Pag. 88.) *Thomisus citreus* [= *Misumena vatia* (CLERCK) 1757].  
Syn.: 1861. *Thomisus vatius* WESTR., p. 442; cet. vid. sup., p. 258.
- (Pag. 90.) *Thomisus abbreviatus* [= *Thomisus onustus* (WALCK.) 1805].  
Vid. sup., p. 427.
- (Pag. 91.) PHILODROMUS [= *Philodromus* (WALCK.) 1825 + *Artanes* THOR. 1869 + *Thanatus* C. KOCH 1837].  
Vid. THOR., On Eur. Spid., pp. 37, 174—181.

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1) *Thom. formosus* BLACKW., Descr. of some newly disc. spec. and char. of a new gen. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., VI, p. 337.

2) *Thom. trux* BLACKW., Descr. of some newly disc. spec. of Aran., etc., in Ann. and Mag. of Nat. Hist., XVIII, p. 300.

- (Pag. 91.) *Philodromus dispar* [= *Philodromus dispar* WALCK. 1825].  
Syn.: 1861. *Philodromus limbatus* WESTR., p. 450; c. v. s., pp. 260, 261.
- (Pag. 93.) *Philodromus pallidus* [= *Artanes margaritatus* (CLERCK) 1757].  
Syn.: 1861. *Philodromus margaritatus* WESTR., p. 454; cet. vid. sup., p. 262.
- (Pag. 94.) *Philodromus elegans* [= *Philodromus elegans* BLACKW. 1859].  
Syn.: 1861. *Philodromus decorus* WESTR., p. 459; cet. vid. sup., p. 268.
- (Pag. 95.) *Philodromus cespiticolis* [= *Philodromus aureolus* (CLERCK) 1757].  
Syn.: 1861. *Philodromus aureolus* WESTR., p. 457; c. v. s., pp. 264, 265.
- (Pag. 96.) \**Philodromus Clarkii* [= *Philodromus Clarkii* BLACKW. 1850<sup>1</sup>].
- (Pag. 97.) \**Philodromus variatus* [= *Philodromus variatus* BLACKW. 1837].  
Vid. sup., p. 428.
- (Pag. 98.) \**Philodromus mistus* [= *Philodromus mixtus* BLACKW. 1837<sup>2</sup>].
- (Pag. 99.) *Philodromus aureolus* [= *Philodromus aureolus* (CLERCK) 1757].  
Syn.: 1861. *Philodromus aureolus* WESTR., p. 457; c. v. s., pp. 264, 265.
- (Pag. 100.) *Philodromus oblongus* [= *Thanatus oblongus* (WALCK.) 1802].  
Syn.: 1861. *Philodromus oblongus* WESTR., p. 464; cet. vid. sup., p. 269.
- (Pag. 101.) SPARASSUS [= *Micrommata* (LATR.) 1804].  
See THOR., On Eur. Spid., pp. 173, 175, 176.
- (Pag. 102.) *Sparassus smaragdulus* [= *Micrommata virescens* (CLERCK) 1757].  
Syn.: 1861. *Sparassus virescens* WESTR., p. 406; cet. vid. sup., pp. 227, 228.
- (Pag. 104.) DRASSIDÆ [= Subordo **Tubitelariæ**, Fam. **Drassoidæ** + Fam. **Agalenoidæ ad part.**].  
Vid. THOR., On Eur. Spid., pp. 137—140; pp. 117—121.
- (Pag. 104.) DRASSUS [= *Gnaphosa* (LATR.) 1804 + *Drassus* (WALCK.) 1805 + *Prosthesima* L. KOCH 1872 + *Micaria* WESTR. 1851 + *Phrurolithus* (C. KOCH) 1839].  
See THOR., On Eur. Spid., pp. 139, 140, 145—151. On *Prosthesima* (= *Melanophora* C. KOCH) see above, p. 430.
- (Pag. 105.) *Drassus lucifugus* [= *Gnaphosa lucifuga* (WALCK.) 1802 + *Gnaphosa anglica* (CAMBR.) 1871].  
Vid. sup., p. 429.

1) *Philodr. Clarkii* BLACKW., Descr. of some newly disc. spec. and char. of a new gen. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., VI, p. 338.

2) *Philodr. mistus* BLACKW., Charact. of a new gen. and some undescr. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., X, p. 103.

- (Pag. 106.) *Drassus ater* [= *Prosthesima Petiverii* (Scop.) 1763].  
Syn.: 1861. *Melanophora subterranea* WESTR., p. 355 (*ad part.*); cet. vid. sup., p. 194<sup>1</sup>).
- (Pag. 107.) *Drassus pusillus* [= *Prosthesima nigrita* (FABR.) 1775].  
Syn.: 1861. *Melanophora pusilla* WESTR., p. 357; cet. vid. sup., p. 199.
- (Pag. 108.) *Drassus pumilus* [= *Prosthesima electa* (C. KOCH) 1839].  
Vid. sup., p. 430.
- (Pag. 109.) *Drassus clavator* [= *Drassus troglodytes* C. KOCH 1839].  
Syn.: 1861. *Drassus troglodytes* WESTR., p. 345; cet. vid. sup., p. 183.
- (Pag. 111.) *Drassus sericeus* [= *Drassus Blackwallii* THOR. 1871].  
Vid. sup., pp. 179, 430.
- (Pag. 112.) \**Drassus reticulatus* [= *Drassus reticulatus* BLACKW. 1852<sup>2</sup>].
- (Pag. 113.) \**Drassus sylvestris* [= *Drassus silvestris* BLACKW. 1833<sup>3</sup>].
- (Pag. 114.) \**Drassus cupreus* [= *Drassus cupreus* BLACKW. 1834<sup>4</sup>].
- (Pag. 116.) *Drassus lapidicolens* [= *Drassus lapidicola* (WALCK.) 1802].  
Syn.: 1861. *Drassodes lapidicola* WESTR., p. 361; cet. vid. sup., p. 202.
- (Pag. 117.) \**Drassus ferrugineus* [= *Drassus ferrugineus* TEMPL. 1861<sup>5</sup>].
- (Pag. 118.) *Drassus micans* [= *Micaria pulicaria* (SUND.) 1832].  
Syn.: 1861. *Micaria pulicaria* WESTR., p. 334; cet. vid. sup., p. 173.
- (Pag. 119.) *Drassus nitens* [= *Micaria pulicaria* (SUND.) 1832].  
Syn.: 1861. *Micaria pulicaria* WESTR., p. 334; cet. vid. sup., p. 173.
- (Pag. 120.) *Drassus propinquus* [= *Phrurolithus festivus* C. KOCH 1835].  
Syn.: 1861. *Phrurolithus festivus* WESTR., p. 327; cet. vid. sup., p. 169.
- (Pag. 121.) CLUBIONA [= *Clubiona* (LATR.) 1804 + *Anypheana* SUND. 1833 + *Liocranum* L. KOCH 1866 + *Chiracanthium* C. KOCH 1839].

On these genera see THOR., On Eur. Spid., pp. 139, 143—145.

1) I have lately received an English ♂ *ad.* of *Prosthes. (Melanoph.) Petiverii* (Scop.) THOR. from the Rev. Mr CAMBRIDGE under the name of *Dr. ater* BLACKW.

2) *Drassus reticulatus* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., X, p. 97.

3) *Drassus sylvestris* BLACKW., Charact. of some undescr. gen. and spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., III, p. 440. — As a synonym to this species BLACKWALL takes up *Dr. signifer* C. KOCH (Die Arachn., VI, p. 31, tab. CLXXXVIII, fig. 452).

4) *Drassus cupreus* BLACKW., Researches in Zool., p. 345 (*sec.* Spid. of Gr. Brit.). — According to BLACKWALL, *Dr. rufus* C. KOCH (Die Arachn., VI, p. 33, Tab. CLXXXIX, figg. 453, 454) is the same species as *Dr. silvestris*.

5) The species described and figured by BLACKWALL from TEMPLETON'S MS. "Hist. of Irish Arachnida", ought, it appears to me, to have TEMPLETON'S name appended as authority. BLACKWALL has not himself seen these species.

- (Pag. 122.) *Clubiona holosericea* [= *Clubiona grisea* L. KOCH 1866].  
Vid. sup., p. 431.
- (Pag. 123.) *Clubiona amarantha* [= *Clubiona terrestris* WESTR. 1851].  
Syn.: 1861. *Clubiona terrestris* WESTR., p. 395; cet. vid. sup., p. 222.
- (Pag. 124.) *Clubiona epimelas* [= *Clubiona pallidula* (CLERCK) 1757].  
Syn.: 1861. *Clubiona pallidula* WESTR., p. 389; cet. vid. sup., pp. 213, 214.
- (Pag. 125.) \**Clubiona formosa* [= *Clubiona pallidula* (CLERCK) 1757?].  
Syn.: ?1861. *Clubiona pallidula* WESTR., p. 389; cet. vid. sup., pp. 213, 214; 215.
- (Pag. 126.) *Clubiona corticalis* [= *Clubiona corticalis* WALCK. 1802].  
Syn.: 1861. *Clubiona corticalis* WESTR., p. 401; cet. vid. sup., p. 225.
- (Pag. 127.) *Clubiona brevipes* [= *Clubiona brevipes* BLACKW. 1841].  
Syn.: 1861. *Clubiona fuscula* WESTR., p. 400; cet. vid. sup., p. 224.
- (Pag. 128.) *Clubiona compta* [= *Clubiona compta* C. KOCH 1839].  
Syn.: 1861. *Clubiona compta* WESTR., p. 403; cet. vid. sup., p. 225.
- (Pag. 130.) *Clubiona pallens* [= *Clubiona subtilis* L. KOCH 1866].  
Vid. sup., p. 431.
- (Pag. 131.) *Clubiona accentuata* [= *Anyphaena accentuata* (WALCK.) 1802].  
Syn.: 1861. *Anyphaena accentuata* WESTR., p. 371; cet. vid. sup., p. 204.
- (Pag. 132.) *Clubiona domestica* [= *Liocranum domesticum* (REUSS) 1834].  
Vid. sup., p. 432.
- (Pag. 134.) \**Clubiona nutrix* [= *Chiracanthium nutrix* (WALCK.) 1802?].  
Syn.: ?1861. *Cheiracanthium nutrix* WESTR., p. 378; cet. vid. sup., p. 207.
- (Pag. 135.) \**Clubiona erratica* [= *Chiracanthium fasciatum* N.].  
Vid. sup., p. 432.
- (Pag. 136.) ARGYRONETA [= *Argyroneta* LATR. 1804].  
See THOR., On Eur. Spid., pp. 121, 137.
- (Pag. 137.) *Argyroneta aquatica* [= *Argyroneta aquatica* (CLERCK) 1757].  
Syn.: 1861. *Argyroneta aquatica* WESTR., p. 368; cet. vid. sup., p. 203,  
et Add. et Corr. in pag. illam.
- (Pag. 139.) CINIFLONIDÆ [= Subordo **Tubitelariæ**, Fam. **Agale-  
noidæ ad part.**, + Subordo **Orbitelariæ**,  
Fam. **Epeiroidæ ad part.**].  
Vid. THOR., On Eur. Spid., pp. 109, 110, 117—122; 47—50,  
64—71.
- (Pag. 139.) CINIFLO [= *Amaurobius* (C. KOCH) 1837 + *Lethia* MENGE  
1869].  
Vid. THOR., On Eur. Spid., pp. 119, 120, 125, 126.



- (Pag. 140.) *Ciniflo atrox* [= *Amaurobius fenestralis* (STRØM) 1768].  
Syn.: 1861. *Amaurobius atrox* WESTR., p. 376; cet. vid. sup., p. 205, et  
Add. et Corr. in pag. illam.
- (Pag. 141.) *Ciniflo similis* [= *Amaurobius similis* (BLACKW.) 1861].  
Vid. sup., pp. 206 et 433.
- (Pag. 142.) *Ciniflo ferox* [= *Amaurobius ferox* (WALCK.) 1830].  
Syn.: 1861. *Amaurobius ferox* WESTR., p. 374; cet. vid. sup., p. 204, et  
Add. et Corr. in pag. illam.
- (Pag. 144.) \**Ciniflo mordax* [= *Amaurobius mordax* (BLACKW.) 1859<sup>1</sup>].
- (Pag. 145.) *Ciniflo humilis* [= *Lethia humilis* (BLACKW.) 1855].  
Vid. sup., p. 433.
- (Pag. 146.) *ERGATIS* [= *Dictyna* SUND. 1833].  
Vid. THOR., On Eur. Spid., p. 122.
- (Pag. 146.) *Ergatis benigna* [= *Dictyna arundinacea* (LINN.) 1758].  
Syn.: 1861. *Dictyna arundinacea* WESTR., p. 383; cet. vid. sup., p. 210, 211.
- (Pag. 148.) \**Ergatis pallens* [= *Dictyna variabilis* C. KOCH 1836, Var.].  
Vid. sup., p. 433.
- (Pag. 149.) *Ergatis latens* [= *Dictyna latens* (FABR.) 1775].  
Syn.: 1861. *Dictyna latens* WESTR., p. 386; cet. vid. sup., p. 212, 213.
- (Pag. 150.) *VELEDA* [= *Uloborus* LATR. 1806].  
Vid. THOR., On Eur. Spid., pp. 65—67.
- (Pag. 150.) *Veleda lineata* [= *Uloborus Walckenaerii* LATR. 1806].  
Vid. sup., p. 434.
- (Pag. 152.) *AGELENIDÆ* [= Subordo **Tubitelariæ**, Fam. **Agalenoidæ**  
ad part. + Fam. **Drassoidæ** ad part.].  
Vid. THOR., On Eur. Spid., pp. 109, 110, 117—121; 137—140.
- (Pag. 152.) *AGELENA* [= *Agalena* (WALCK.) 1805 + *Hahnia* (C. KOCH)  
1841 + *Agræca* WESTR. 1861 + *Liocranum* L.  
KOCH 1866 ad part.].  
See THOR., On Eur. Spid., p. 120, 121, 127—136, 139, 143.
- (Pag. 152.) *Agelena labyrinthica* [= *Agalena labyrinthica* (CLERCK) 1757].  
Syn.: 1861. *Agelena labyrinthica* WESTR., p. 309; cet. vid. sup., p. 159.

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1) *Ciniflo mordax* BLACKW., DESC. of six recently disc. spec. etc., in Ann. and Mag. of Nat. Hist., 3 Ser., III, p. 93.

- (Pag. 154.) \**Agelena Hyndmannii* [= *Agalena* (?) *Hyndmannii* TEMPL. 1861<sup>1</sup>].
- (Pag. 155.) *Agelena elegans* [= *Hahnia elegans* (BLACKW.) 1841].  
 Syn.: 1841. *Agelena elegans* BLACKW., The differ. in the numb. of eyes, *cet.*, p. 619.  
 ?1841. *Hahnia pratensis* C. KOCH, Die Arachn., VIII, p. 64, Tab. CCLXX, fig. 639.  
 1869. " " MENGE, Preuss. Spinn., III, p. 253, Pl. 48, tab. 150.  
 Vid. sup., pp. 165, 166.
- (Pag. 156.) \**Agelena prompta* [= *Agalena prompta* BLACKW. 1841<sup>2</sup>].
- (Pag. 157.) *Agelena montana* [= *Hahnia montana* (BLACKW.) 1841].  
 Vid. sup., p. 435.
- (Pag. 158.) *Agelena nava* [= *Hahnia nava* (BLACKW.) 1841].  
 Syn.: 1861. *Hahnia pusilla* WESTR., p. 316; *cet. vid. sup.*, p. 163.
- (Pag. 159.) *Agelena brunnea* [= *Agræca brunnea* (BLACKW.) 1833].  
 Syn.: 1861. *Agræca linotina* WESTR., p. 313; *cet. vid. sup.*, p. 162, et *Add. et Corr. in pag. illam.*
- (Pag. 161.) \**Agelena celans* [= *Liocranum* (?) *celans* (BLACKW.) 1841].  
 Vid. sup., p. 435.
- (Pag. 162.) \**Agelena gracilipes* [= *Liocranum gracilipes* (BLACKW.) 1859].  
 Vid. sup., p. 436.
- (Pag. 163.) TEGENARIA [= *Tegenaria* (LATR.) 1804 + *Cryphæca* THOR. 1870].  
 See THOR., On Eur. Spid., pp. 120, 129—131.
- (Pag. 163.) *Tegenaria domestica* [= *Tegenaria Guyonii* (GUÉR.) 1837].  
 Vid. sup., p. 436.
- (Pag. 165.) *Tegenaria atrica* [= *Tegenaria atrica* C. KOCH 1843].  
 Syn.: 1861. *Tegenaria atrica* WESTR., p. 304; *cet. vid. sup.*, pp. 154, 155.
- (Pag. 166.) *Tegenaria civilis* [= *Tegenaria Derhamii* (SCOP.) 1763].  
 Syn.: 1861. *Tegenaria civilis* WESTR., p. 307; *cet. vid. sup.*, p. 157, et *Add. et Corr. in pag. illam.*
- (Pag. 168.) *Tegenaria silvicola* [= *Cryphæca silvicola* (C. KOCH) 1834].  
 Syn.: 1861. *Hahnia silvicola* WESTR., p. 320; *cet. vid. sup.*, p. 167.

1) This species certainly does not belong to the genus *Agelena*, as determined by me (On Eur. Spid., p. 120).

2) *Agelena prompta* BLACKW., The differ. in the numb. of eyes *etc.*, in Transact. of the Linn. Soc., XVIII, p. 621.

- (Pag. 169.) CÆLOTES [= *Cælotes* BLACKW. 1841].  
Vid. THOR., On Eur. Spid., pp. 120, 128.
- (Pag. 169.) Cælotes saxatilis [= *Cælotes atropos* (WALCK.) 1830].  
Vid. sup., p. 437.
- (Pag. 171.) TEXTRIX [= *Textrix* SUND. 1833].  
Vid. THOR., On Eur. Spid., pp. 120, 134, 135.
- (Pag. 172.) Textrix lycosina [= *Textrix denticulata* (OLIV.) 1789].  
Syn.: 1861. *Textrix lycosina* WESTR., p. 311; cet. vid. sup., pp. 160, 161,  
et *Add. et Corr.* in pag. 160.
- (Pag. 175.) THERIDIIDÆ [= Subordo **Retitelariæ**, Fam. **Theridioidæ**  
*ad part.* + Fam. **Scytodoidæ** *ad part.*].  
See THOR., On Eur. Spid., p. 71—77; 98—101.
- (Pag. 175.) THERIDION [= *Phyllonethis* THOR. 1870 + *Steatoda* (SUND.)  
1833 + *Theridium* (WALCK.) 1805 + *Euryopis*  
(MENGE) 1868 + *Episinus* WALCK. 1809 + *Ero*  
(C. KOCH) 1837 + *Asagena* SUND. 1833 + *Lin-  
nyphia* (LATR.) 1804 *ad part.*].  
On these genera see THOR., On Eur. Spid., pp. 75—77, 79—85,  
89—94, 96—98.
- (Pag. 176.) Theridion lineatum [= *Phyllonethis lineata* (CLERCK) 1757].  
Syn.: 1861. *Theridium lineatum* WESTR., p. 153; cet. vid. sup., pp. 78, 79.
- (Pag. 177.) Theridion quadripunctatum [= *Steatoda bipunctata* (LINN.)  
1758].  
Syn.: 1861. *Theridium bipunctatum* WESTR., p. 184; cet. vid. sup., p. 91.
- (Pag. 179.) Theridion Sisypium [= *Theridium formosum* (CLERCK) 1757].  
Syn.: 1861. *Theridium formosum* WESTR., p. 157; cet. vid. sup., pp. 81, 82.
- (Pag. 180.) Theridion tepidariorum [= *Theridium tepidariorum* C. KOCH  
1841].  
Syn.: 1861. *Theridium tepidariorum* WESTR., p. 155; cet. vid. sup., pp. 80, 81.
- (Pag. 182.) Theridion riparium [= *Theridium riparium* BLACKW. 1834].  
Syn.: 1861. *Theridium saxatile* WESTR., p. 159; cet. vid. sup., pp. 82, 83.
- (Pag. 183.) Theridion nervosum [= *Theridium sisypium* (CLERCK) 1757].  
Syn.: 1861. *Theridium sisypium* WESTR., p. 170; cet. vid. sup., pp. 86, 87.
- (Pag. 184.) Theridion pictum [= *Theridium pictum* WALCK. 1802].  
Syn.: 1861. *Theridium pictum* WESTR., p. 161; cet. vid. sup., p. 83.

- (Pag. 185.) *Theridion denticulatum* [= *Theridium denticulatum* WALCK. 1802].  
 Syn.: 1861. *Theridium denticulatum* WESTR., p. 162; cet. vid. sup., p. 83, et *Add. et Corr.* in pag. illam.
- (Pag. 187.) *Theridion simile* [= *Theridium simile* C. KOCH 1836].  
 Syn.: 1861. *Theridium simile* WESTR., p. 164; cet. vid. sup., p. 84.
- (Pag. 188.) *Theridion varians* [= *Theridium varians* HAHN 1831].  
 Syn.: 1861. *Theridium varians* WESTR., p. 167; cet. vid. sup., p. 85.
- (Pag. 190.) *Theridion tinctum* [= *Theridium tinctum* WALCK. 1802].  
 Syn.: 1861. *Theridium tinctum* WESTR., p. 165; cet. vid. sup., p. 84.
- (Pag. 191.) *Theridion pulchellum* [= *Theridium pulchellum* WALCK. 1802].  
 Syn.: 1861. *Theridium pulchellum* WESTR., p. 177; cet. vid. sup., p. 89.
- (Pag. 192.) *Theridion Carolinum* [= *Theridium bimaculatum* (LINN.) 1767].  
 Syn.: 1861. *Theridium bimaculatum* WESTR., p. 172; cet. vid. sup., p. 87.
- (Pag. 193.) *Theridion versutum* [= *Steatoda versuta* (BLACKW.) 1846].  
 Syn.: 1861. *Theridium hamatum* WESTR., p. 181; cet. vid. sup., p. 89.
- (Pag. 194.) *Theridion pallens* [= *Theridium pallens* BLACKW. 1834].  
 Vid. sup., p. 438.
- (Pag. 196.) *Theridion stictum* [= *Steatoda sticta* (CAMBR.) 1861].  
 Vid. sup., p. 439.
- (Pag. 196.) *Theridion inornatum* [= *Euryopsis inornata* (CAMBR.) 1861].  
 Vid. sup., p. 439.
- (Pag. 197.) \**Theridion fuscum* [= *Euryopsis* (?) *fusca* (BLACKW.) 1841<sup>1)</sup>].
- (Pag. 198.) \**Theridion auratum* [= *Theridium* (?) *auratum* (TEMPL.) 1864].
- (Pag. 198.) \**Theridion hæmatostigma* [= *Steatoda* (?) *hæmatostigma* (TEMPL.) 1864].
- (Pag. 199.) \**Theridion albens* [= *Theridium pallens* BLACKW. 1834, *Var.*?].  
 Vid. sup., p. 438.
- (Pag. 200.) *Theridion guttatum* [= *Steatoda guttata* (REUSS) 1834].  
 Syn.: 1861. *Theridium guttatum* WESTR., p. 188; cet. vid. sup., p. 93.
- (Pag. 201.) *Theridion flavo-maculatum* [= *Euryopsis flavo-maculata* (C. KOCH) 1836].  
 Syn.: 1861. *Theridium flavomaculatum* WESTR., p. 192, cet. vid. sup., p. 95.

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1) *Ther. fuscum* BLACKW., The differ. in the numb. of eyes, etc., in Transact. of the Linn. Soc., XVIII, p. 626.

- (Pag. 202.) *Theridion angulatum* [= *Episinus truncatus* WALCK. 1809].  
Syn.: 1861. *Episinus truncatus* WESTR., p. 194; cet. vid. sup., p. 96.
- (Pag. 203.) *Theridion variegatum* [= *Ero thoracica* (REUSS) 1834].  
Syn.: 1861. *Ero variegata* WESTR., p. 149; cet. vid. sup., 77.
- (Pag. 205.) *Theridion signatum* [= *Asagena phalerata* (PANZ.) 1801].  
Syn.: 1861. *Asagena serratipes* WESTR., p. 173; cet. vid. sup., p. 87.
- (Pag. 206.) *Theridion filipes* [= *Linyphia concolor* REUSS 1834].  
Syn.: 1861. *Linyphia concolor* WESTR., p. 134; cet. vid. sup., p. 70.
- (Pag. 207.) **PHOLCUS** [= *Pholcus* WALCK. 1805].  
See THOR., On Eur. Spid., p. 101.
- (Pag. 208.) *Pholcus phalangioides* [= *Pholcus phalangioides* (FUESSL.) 1775].  
Syn.: 1861. *Pholcus opilionoides* WESTR., p. 296; cet. vid. sup., p. 145.
- (Pag. 210.) **LINYPHIIDÆ** [= Subordo **Retitellaræ**, Fam. **Theridioidea** ad part.].  
Vid. THOR., On Eur. Spid., p. 71—77.
- (Pag. 210.) **LINYPHIA** [= *Linyphia* (LATR.) 1804 ad max. part. + *Nesticus* THOR. 1870 + *Tapinopa* WESTR. 1851].  
See on these genera THOR., On Eur. Spid., pp. 75, 76, 81—85, 88.
- (Pag. 211.) *Linyphia montana* [= *Linyphia triangularis* (CLERCK) 1757].  
Syn.: 1861. *Linyphia triangularis* WESTR., p. 96; cet. vid. sup., p. 46.
- (Pag. 212.) *Linyphia triangularis* [= *Linyphia marginata* C. KOCH 1834].  
Syn.: 1861. *Linyphia marginata* WESTR., p. 105; cet. vid. sup., p. 51.
- (Pag. 213.) *Linyphia marginata* [= *Linyphia montana* (CLERCK) 1757].  
Syn.: 1861. *Linyphia montana* WESTR., p. 92; cet. vid. sup., p. 44.
- (Pag. 215.) *Linyphia pratensis* [= *Linyphia hortensis* SUND. 1830].  
Syn.: 1861. *Linyphia hortensis* WESTR., p. 99; cet. vid. sup., p. 48.
- (Pag. 216.) *Linyphia fuliginea* [= *Linyphia pusilla* SUND. 1830].  
Syn.: 1861. *Linyphia pusilla* WESTR., p. 101; cet. vid. sup., p. 50.
- (Pag. 217.) *Linyphia rubea* [= *Linyphia peltata* REUSS 1834].  
Syn.: 1861. *Linyphia peltata* WESTR., p. 103; cet. vid. sup., p. 51.
- (Pag. 218.) *Linyphia minuta* [= *Linyphia minuta* BLACKW. 1833].  
Syn.: 1861. *Linyphia domestica* WESTR., p. 114 (ad part.); cet. vid. sup., p. 55.
- (Pag. 220.) *Linyphia cauta* [= *Linyphia thoracica* REUSS 1834].  
Syn.: 1861. *Linyphia thoracica* WESTR., p. 107; cet. vid. sup., p. 52.
- (Pag. 221.) *Linyphia vivax* [= *Linyphia nebulosa* SUND. 1830].  
Syn.: 1861. *Linyphia crypticola* WESTR., p. 113; cet. vid. sup., p. 54.

- (Pag. 222.) *Linyphia socialis* [= *Linyphia socialis* SUND. 1830].  
Syn.: 1861. *Linyphia socialis* WESTR., p. 125; cet. vid. sup.; p. 65.
- (Pag. 224.) *Linyphia crypticolens* [= *Nesticus cellulanus* (CLERCK) 1757].  
Syn.: 1861. *Theridium cellulanum* WESTR., p. 154; cet. vid. sup., pp. 79, 80.
- (Pag. 226.) *Linyphia alticeps* [= *Linyphia luteola* BLACKW. 1833].  
Syn.: 1861. *Linyphia affinis* WESTR., p. 595; cet. vid. sup., p. 63.
- (Pag. 227.) *Linyphia longidens* [= *Tapinopa longidens* (REUSS) 1834].  
Syn.: 1861. *Tapinopa longidens* WESTR., p. 142; cet. vid. sup., p. 74.
- (Pag. 228.) *Linyphia frenata* [= *Linyphia frenata* REUSS 1834].  
Syn.: 1861. *Linyphia frenata* WESTR., p. 110; cet. vid. sup., p. 54.
- (Pag. 230.) *Linyphia tenuis* [= *Linyphia tenebricola* REUSS 1834, Var.].  
Syn.: 1861. *Linyphia pygmæa* WESTR., p. 126; cet. vid. sup., pp. 65, 66,  
et *Add. et Corr.* in pag. illam.
- (Pag. 231.) *Linyphia terricola* [= *Linyphia tenebricola* REUSS 1834, Var.].  
Syn.: 1861. *Linyphia pygmæa* WESTR., p. 126; vid. spec. antecedentem, *Lin. tenuem*.
- (Pag. 232.) \**Linyphia Meadii* [= *Linyphia Meadii* BLACKW. 1853<sup>1)</sup>].
- (Pag. 233.) *Linyphia Claytoniæ* [= *Linyphia dorsalis* REUSS 1834].  
Syn.: 1861. *Linyphia dorsalis* WESTR., p. 139; cet. vid. sup., p. 73.
- (Pag. 234.) *Linyphia pulla* [= *Linyphia nigrina* WESTR. 1851].  
Syn.: 1861. *Linyphia nigrina* WESTR., p. 132; cet. vid. sup., p. 69.
- (Pag. 235.) *Linyphia alacris* [= *Linyphia alacris* BLACKW. 1853].  
Syn.: 1861. *Linyphia tenebricola* WESTR., p. 116; cet. vid. sup., p. 57.
- (Pag. 237.) \**Linyphia nasata* [= *Linyphia nasata* (TEMPL.) 1864].
- (Pag. 237.) *Linyphia ericæa* [= *Linyphia ericæa* BLACKW. 1853].  
Vid. sup., p. 439.
- (Pag. 238.) *Linyphia insignis* [= *Linyphia insignis* BLACKW. 1841].  
Syn.: 1861. *Linyphia pallescens* WESTR., p. 119; cet. vid. sup., p. 63.
- (Pag. 239.) \**Linyphia pernix* [= *Linyphia pernix* BLACKW. 1852<sup>2)</sup>].
- (Pag. 240.) \**Linyphia nigella* [= *Linyphia nigella* BLACKW. 1836<sup>3)</sup>].
- (Pag. 241.) *Linyphia albula* [= *Linyphia albula* CAMBR. 1861].  
Vid. sup., p. 440.

1) *Lin. Meadii* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., XI, p. 17.

2) *Lin. pernix* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., X, p. 98.

3) *Lin. nigella* BLACKW., Charact. of some undescr. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 487.

(Pag. 242.) \**Linyphia pulchella* [= *Linyphia pulchella* BLACKW. 1846<sup>1</sup>)].

(Pag. 243.) \**Linyphia furva* [= *Linyphia furva* BLACKW. 1841<sup>2</sup>)].

(Pag. 244.) *Linyphia obscura* [= *Linyphia obscura* BLACKW. 1841].  
Vid. sup., p. 441.

(Pag. 245.) \**Linyphia gracilis* [= *Linyphia gracilis* BLACKW. 1841<sup>3</sup>)].

(Pag. 246.) \**Linyphia tenella* [= *Linyphia tenella* BLACKW. 1854<sup>4</sup>)].

(Pag. 246.) *Linyphia circumspecta* [= *Linyphia circumspecta* BLACKW. 1854].

Vid. sup., p. 442.

(Pag. 247.) \**Linyphia flavipes* [= *Linyphia flavipes* BLACKW. 1854<sup>5</sup>)].

(Pag. 248.) NERIËNE [= *Linyphia* (LATR.) 1804 *ad part.* + *Erigone* SAV. et AUD. 1825—27 *ad part.*].

See THOR., On Eur. Spid., pp. 81—88; Rem. on Syn., p. 97.

(Pag. 249.) *Neriëne marginata* [= *Linyphia clathrata* SUND. 1830].  
Syn.: 1861. *Linyphia clathrata* WESTR., p. 94; cet. vid. sup., p. 45.

(Pag. 250.) *Neriëne bicolor* [= *Linyphia bicolor* (BLACKW.) 1833].  
Syn.: 1861. *Linyphia comata* WESTR., p. 123; cet. vid. sup., p. 64.

(Pag. 251.) \**Neriëne rufipes* [= *Erigone* (?) *lapidicola* N.].  
Vid. sup., p. 443.

(Pag. 252.) *Neriëne livida* [= *Erigone livida* (BLACKW.) 1836].  
Syn.: 1861. *Erigone pinguis* WESTR., p. 269 (*ad part.*); cet. vid. sup., p. 131,  
et *Add. et Corr.* in pag. illam.

(Pag. 253.) \**Neriëne furva* [= *Erigone* (?) *furva* (BLACKW.) 1836<sup>6</sup>)].

(Pag. 253.) *Neriëne errans* [= *Linyphia errans* (BLACKW.) 1841].  
Vid. sup., p. 443.

(Pag. 254.) *Neriëne sylvatica* [= *Erigone silvatica* (BLACKW.) 1841].  
Syn.: 1861. *Erigone silvestris* WESTR., p. 273; cet. vid. sup., p. 134.

1) *Lin. pulchella* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., XVIII, p. 301.

2) *Lin. furva* BLACKW., The differ. in the numb. of eyes, etc., in Transact. of the Linn. Soc., XVIII, p. 663.

3) *Lin. gracilis* BLACKW., op. cit., ibid., p. 666.

4) *Lin. tenella* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., XIII, p. 177.

5) *Lin. flavipes* BLACKW., op. cit., ibid., p. 178.

6) *Ner. furva* BLACKW., Charact. of some undescr. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 486.

- (Pag. 255.) Neriëne viaria [= *Erigone viaria* (BLACKW.) 1841].  
Syn.: 1861. *Erigone quisquiliarum* WESTR., p. 277; cet. vid. sup., p. 136.
- (Pag. 256.) \*Neriëne pulla [= *Erigone* (?) *pulla* (BLACKW.) 1841<sup>1)</sup>].
- (Pag. 256.) \*Neriëne gracilis [= *Erigone fuscipalpis* (C. KOCH) 1836?].  
Syn.: 1861. *Erigone rurestris* WESTR., p. 287; cet. vid. sup., pp. 140, 141.
- (Pag. 257.) Neriëne vagans [= *Erigone longimana* C. KOCH 1841].  
Syn.: 1861. *Erigone longimana* WESTR., p. 204; cet. vid. sup., p. 103.
- (Pag. 258.) Neriëne dentata [= *Erigone dentata* (REUSS) 1834].  
Syn.: 1861. *Erigone dentata* WESTR., p. 262; cet. vid. sup., p. 128.
- (Pag. 259.) Neriëne affinis [= *Erigone affinis* (BLACKW.) 1855].  
Vid. sup., p. 444.
- (Pag. 260.) Neriëne Huthwaitii [= *Erigone Huthwaitii* (CAMBR.) 1861].  
Vid. sup., p. 444.
- (Pag. 261.) \*Neriëne pygmæa [= *Erigone* (?) *pygmæa* (BLACKW.) 1834<sup>2)</sup>].
- (Pag. 261.) \*Neriëne lugubris [= *Erigone* (?) *lugubris* (BLACKW.) 1834<sup>3)</sup>].
- (Pag. 262.) Neriëne saxatilis [= *Linyphia saxatilis* (BLACKW.) 1844].  
Vid. sup., p. 445.
- (Pag. 263.) \*Neriëne avida [= *Erigone avida* (BLACKW.) 1844<sup>4)</sup>].
- (Pag. 263.) \*Neriëne timida [= *Erigone* (?) *timida* (BLACKW.) 1844<sup>5)</sup>].
- (Pag. 264.) Neriëne flavipes [= *Erigone fuscipalpis* (C. KOCH) 1836].  
Syn.: 1861. *Erigone rurestris* WESTR., p. 287; cet. vid. sup., pp. 140, 141.
- (Pag. 265.) \*Neriëne parva [= *Erigone* (?) *minima* (WALCK.) 1847].  
Vid. sup., p. 445.
- (Pag. 265.) Neriëne munda [= *Erigone rufipes* (LINN.) 1758].  
Syn.: 1861. *Erigone rufipes* WESTR., p. 259; cet. vid. sup., p. 126.
- (Pag. 266.) Neriëne tibialis [= *Erigone tibialis* (BLACKW.) 1836].  
Vid. sup., pp. 445, 446.
- (Pag. 267.) Neriëne cornuta [= *Erigone cornuta* (BLACKW.) 1833].  
Syn.: 1861. *Erigone bicuspidata* WESTR., p. 208; cet. vid. sup., p. 105.

1) *Ner. pulla* BLACKW., The differ. in the numb. of eyes, etc., p. 646; *Argus pullus* WALCK., H. N. d. Ins. Apt., IV, p. 512.

2) *Ner. pygmæa* BLACKW., Researches in Zool., p. 376 (sec. Spid. of Gr. Brit.).

3) *Ner. lugubris* BLACKW., ibid., p. 380 (sec. Spid. of Gr. Brit.).

4) *Ner. avida* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., XIII, p. 185.

5) *Ner. timida* BLACKW., op. cit., ibid., p. 183.



- (Pag. 268.) Neriëne bituberculata [= *Erigone bituberculata* (REUSS) 1834].  
Syn.: 1861. *Erigone bituberculata* WESTR., p. 210; cet. vid. sup., p. 106.
- (Pag. 269.) Neriëne apicata [= *Erigone apicata* (BLACKW.) 1850].  
Syn.: 1861. *Erigone gibbicollis* WESTR., p. 223; cet. vid. sup., p. 112.
- (Pag. 270.) Neriëne rubens [= *Erigone rubens* (BLACKW.) 1833].  
Syn.: 1861. *Erigone chelifera* WESTR., p. 264; cet. vid. sup., p. 129.
- (Pag. 271.) Neriëne nigra [= *Erigone nigra* (BLACKW.) 1834].  
Syn.: 1861. *Erigone scabristernis* WESTR., p. 206; cet. vid. sup., p. 104.
- (Pag. 272.) Neriëne graminicola [= *Erigone graminicola* (SUND.) 1830].  
Syn.: 1861. *Erigone graminicola* WESTR., p. 257; cet. vid. sup., p. 126.
- (Pag. 273.) \*Neriëne cornigera [= *Erigone*(?) *cornigera* (BLACKW.) 1856<sup>1)</sup>].
- (Pag. 273.) \*Neriëne montana [= *Erigone*(?) *montana* (BLACKW.) 1856<sup>2)</sup>].
- (Pag. 274.) Neriëne longipalpis [= *Erigone atra* BLACKW. 1833 + *Erigone dentipalpis* (REUSS) 1834].

*E. atra*:

Syn.: 1861. *Erigone vagabunda* WESTR., p. 597; cet. vid. sup., p. 102.

*E. dentipalpis*:

Syn.: 1861. *Erigone dentipalpis* WESTR., p. 199; cet. vid. sup., p. 101.

- (Pag. 275.) \*Neriëne fusca [= *Erigone fusca* (BLACKW.) 1834].  
Syn.: 1861. *Erigone simplex* WESTR., p. 255; cet. vid. sup., p. 125<sup>3)</sup>.
- (Pag. 276.) Neriëne agrestis [= *Erigone fusca* (BLACKW.) 1834].  
Syn.: 1861. *Erigone simplex* WESTR., p. 255; cet. vid. sup., p. 125<sup>3)</sup>.
- (Pag. 277.) Neriëne vigilax [= *Erigone vigilax* (BLACKW.) 1853].  
Vid. sup., p. 446.
- (Pag. 278.) Neriëne gibbosa [= *Erigone gibbosa* (BLACKW.) 1841].  
Vid. sup., p. 446.
- (Pag. 279.) Neriëne tuberosa [= *Erigone tuberosa* (BLACKW.) 1841].  
Vid. sup., p. 447.
- (Pag. 279.) Neriëne trilineata [= *Linyphia bucculenta* (CLERCK) 1757].  
Syn.: 1861. *Linyphia bucculenta* WESTR., p. 109; cet. vid. sup., p. 53.
- (Pag. 281.) Neriëne rubella [= *Erigone isabellina* (C. KOCH) 1841].  
Syn.: 1861. *Erigone isabellina* WESTR., p. 266; cet. vid. sup., p. 129.

1) *Ner. cornigera* BLACKW., Descr. of three newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., XVII, p. 233.

2) *Ner. montana* BLACKW., op. cit., ibid., p. 234.

3) If *N. fusca* and *N. agrestis* BLACKW. (1853) were two different species, *E. simplex* WESTR. should be expunged from among the synonyms of *N. fusca* BLACKW.; *N. agrestis* ID. ought then to be called *E. simplex* WESTR. 1851.

- (Pag. 282.) *Neriëne variegata* [= *Linyphia variegata* (BLACKW.) 1841].  
Syn.: 1861. *Linyphia gracilis* WESTR., p. 138; cet. vid. sup., p. 71.
- (Pag. 283.) \**Neriëne pilosa* [= *Erigone* (?) *pilosa* (TEMPL.) 1864].
- (Pag. 283.) \**Neriëne pallidula* [= *Erigone* (?) *pallidula* (TEMPL.) 1864].
- (Pag. 284.) \**Neriëne carinata* [= *Erigone* (?) *carinata* (TEMPL.) 1864].
- (Pag. 284.) \**Neriëne sulcata* [= *Erigone* (?) *sulcata* (BLACKW.) 1844<sup>1</sup>].
- (Pag. 285.) *Neriëne herbigrada* [= *Erigone herbigrada* (BLACKW.) 1854].  
Vid. sup., p. 448.
- (Pag. 286.) *Neriëne abnormis* [= *Linyphia abnormis* (BLACKW.) 1841].  
Vid. sup., p. 448.
- (Pag. 287.) *Neriëne rubripes* [= *Erigone rufa* (REUSS) 1834].  
Syn.: 1861. *Erigone erythrocephala* WESTR., p. 271; cet. vid. sup., p. 132.
- (Pag. 288.) \**Neriëne dubia* [= *Erigone* (?) *dubia* (BLACKW.) 1841<sup>2</sup>].
- (Pag. 289.) WALCKENAËRA [= *Erigone* SAV. et AUD. 1825—27 *ad part.*].  
Vid. THOR., On Eur. Spid., pp. 85—88; Rem. on Syn., p. 97.
- (Pag. 289.) Walckenaëra acuminata [= *Erigone acuminata* (BLACKW.) 1833].  
Syn.: 1861. *Erigone cornuta* WESTR., p. 218; cet. vid. sup., p. 109.
- (Pag. 290.) Walckenaëra cuspidata [= *Erigone cuspidata* (BLACKW.) 1833].  
Vid. sup., p. 449.
- (Pag. 291.) Wackenaëra monoceros [= *Erigone monoceros* (REUSS) 1834].  
Syn.: 1861. *Erigone monoceros* WESTR., p. 221; cet. vid. sup., pp. 110, 111.
- (Pag. 292.) Walckenaëra Hardii [= *Erigone Hardii* (BLACKW.) 1850].  
Vid. sup., p. 449.
- (Pag. 293.) Walckenaëra unicornis [= *Erigone unicornis* (CAMBR.) 1861].  
Vid. sup., p. 449.
- (Pag. 294.) \*Walckenaëra obtusa [= *Erigone obtusa* (BLACKW.) 1836<sup>3</sup>].
- (Pag. 295.) Walckenaëra fuscipes [= *Erigone fuscipes* (BLACKW.) 1836].  
Vid. sup., p. 450.

1) *Ner. sulcata* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., XIII, p. 184.

2) *Ner. dubia* BLACKW., The differ. in the numb. of eyes, etc., p. 652; *Argus dubius* WALCK., H. N. d. Ins. Apt., IV, p. 513.

3) *Walcken. obtusa* BLACKW., Charact. of some undescr. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 482.

- (Pag. 295.) Walckenaëra punctata [= *Erigone punctata* (BLACKW.) 1841].  
Vid. sup., p. 450.
- (Pag. 296.) Walckenaëra parallela [= *Erigone parallela* (REUSS) 1834].  
Vid. sup., p. 451.
- (Pag. 297.) Walckenaëra obscura [= *Erigone obscura* (BLACKW.) 1834].  
Syn.: 1861. *Erigone impolita* WESTR., p. 245; cet. vid. sup., p. 123.
- (Pag. 298.) Walckenaëra flavipes [= *Erigone flavipes* (BLACKW.) 1834].  
Vid. sup., p. 451.
- (Pag. 299.) \*Walckenaëra turgida [= *Erigone turgida* (BLACKW. (1841<sup>1</sup>)).
- (Pag. 300.) \*Walckenaëra atra [= *Erigone sordidata* N.].  
Vid. sup., p. 452.
- (Pag. 301.) Walckenaëra aggeris [= *Erigone scabricula* WESTR. 1851].  
Syn.: 1861. *Erigone scabricula* WESTR., p. 248; cet. vid. sup., p. 123.
- (Pag. 302.) Walckenaëra hiemalis [= *Erigone hiemalis* (BLACKW.) 1841].  
Syn.: 1861. *Erigone coriacea* WESTR., p. 243; cet. vid. sup., p. 122.
- (Pag. 302.) Walckenaëra bifrons [= *Erigone bifrons* (BLACKW.) 1841].  
Syn.: 1861. *Erigone elevata* WESTR., p. 225; cet. vid. sup., p. 113.
- (Pag. 303.) \*Walckenaëra bicolor [= *Erigone bicolor* (BLACKW.) 1841<sup>2</sup>].
- (Pag. 304.) \*Walckenaëra parva [= *Erigone parva* (BLACKW.) 1841<sup>3</sup>].
- (Pag. 305.) \*Walckenaëra exilis [= *Erigone exilis* (BLACKW.) 1853<sup>4</sup>].
- (Pag. 306.) Walckenaëra depressa [= *Erigone brevis* (REUSS) 1834].  
Syn.: 1861. *Erigone phæopus* WESTR., p. 292; cet. vid. sup., p. 142.
- (Pag. 306.) Walckenaëra pratensis [= *Erigone pratensis* BLACKW. 1861<sup>5</sup>].
- (Pag. 307.) Walckenaëra humilis [= *Erigone humilis* (BLACKW.) 1841].  
Vid. sup., p. 452.
- (Pag. 308.) \*Walckenaëra vafra [= *Erigone vafra* (BLACKW.) 1856<sup>6</sup>].
- (Pag. 309.) Walckenaëra cristata [= *Erigone cristata* (BLACKW.) 1833].  
Syn.: 1861. *Erigone bicornis* WESTR., p. 216; cet. vid. sup., p. 108.

1) Walcken. *turgida* BLACKW., The differ. in the numb. of eyes etc., p. 630.

2) Walcken. *bicolor* BLACKW., ibid., p. 635.

3) Walcken. *parva* BLACKW., ibid., p. 635; *Argus parvus* WALCK., H. N. d. Ins. Apt., IV, p. 508. — On *Neriène parva* BLACKW., see above, p. 445.

4) Walcken. *exilis* BLACKW., Descr. of some newly disc. spec. of Aran., in Ann. and Mag. of Nat. Hist., 2 Ser., XI, p. 25.

5) Walcken. *pratensis* BLACKW., Descr. of several recently disc. Spid., ibid., 3 Ser., VIII, p. 445.

6) Walcken. *vafra* BLACKW., Descr. of three newly disc. spec. of Aran., ibid., 2 Ser., XVII, p. 235.

- (Pag. 310.) Walckenaëra antica [= *Erigone antica* (REUSS) 1834].  
Syn.: 1861. *Erigone antica* WESTR., p. 214; cet. vid. sup., p. 107.
- (Pag. 311.) \*Walckenaëra saxicola [= *Erigone saxicola* (CAMBR.) 1864<sup>1</sup>].
- (Pag. 312.) Walckenaëra pumila [= *Erigone pumila* (BLACKW.) 1841].  
Vid. sup., p. 452.
- (Pag. 313.) Walckenaëra picina [= *Erigone picina* (BLACKW.) 1841].  
Vid. sup., p. 453.
- (Pag. 314.) Walckenaëra fastigata [= *Erigone Thorellii* WESTR. 1861].  
Syn.: 1861. *Erigone Thorellii* WESTR., p. 228; cet. vid. sup., p. 114.
- (Pag. 315.) Walckenaëra nemoralis [= *Erigone nemoralis* (BLACKW.) 1841].  
Vid. sup., p. 453.
- (Pag. 316.) Walckenaëra ludicra [= *Erigone ludicra* (CAMBR.) 1861].  
Vid. sup., p. 454.
- (Pag. 317.) Walckenaëra frontata [= *Erigone frontata* (BLACKW.) 1833].  
Syn.: 1861. *Erigone conica* WESTR., p. 220, 598; cet. vid. sup., p. 110.
- (Pag. 318.) PACHYGNATHA [= *Pachygnatha* SUND. 1823].  
See THOR., On Eur. Spid., pp. 76—78.
- (Pag. 318.) Pachygnatha Clerckii [= *Pachygnatha Clerckii* SUND. 1823].  
Syn.: 1861. *Pachygnatha Clerckii* WESTR., p. 144; cet. vid. sup., p. 75.
- (Pag. 320.) Pachygnatha Listeri [= *Pachygnatha Listeri* SUND. 1830].  
Syn.: 1861. *Pachygnatha Listeri* WESTR., p. 146; cet. vid. sup., pp. 75, 76.
- (Pag. 321.) Pachygnatha De Geeri [= *Pachygnatha De Geeri* SUND. 1830].  
Syn.: 1861. *Pachygnatha De Geeri* WESTR., p. 147; cet. vid. sup., p. 76.
- (Pag. 323.) EPËIRIDÆ [= Subordo **Orbitelariæ**, Fam. **Epeiroidæ** *ad max. part.*].  
See THOR., On Eur. Spid., pp. 47—50.
- (Pag. 323.) EPËIRA [= *Epeira* (WALCK.) 1805 + *Zilla* (C. KOCH) 1834  
+ *Cercidia* THOR. 1869 + *Meta* (C. KOCH) 1836  
+ *Singa* (C. KOCH) 1836 + *Cyrtophora* (SIM.) 1864].  
See on these genera THOR., On Eur. Spid., pp. 49, 50, 53—62.
- (Pag. 324.) Epëira quadrata [= *Epeira quadrata* (CLERCK) 1757].  
Syn.: 1861. *Epeira quadrata* WESTR., p. 30; cet. vid. sup., p. 13.
- (Pag. 325.) Epëira apoclista [= *Epeira cornuta* (CLERCK) 1757].  
Syn.: 1861. *Epeira cornuta* WESTR., p. 34; cet. vid. sup., pp. 15, 16.

1) Walcken. saxicola CAMBR., Descr. of ten new spec. of Spid., etc., in Ann. and Mag. of Nat. Hist., 3 Ser., VII, p. 440.

- (Pag. 328.) *Epëira sericata* [= *Epeira scolopetaria* (CLERCK) 1757].  
Syn.: 1861. *Epeira scolopetaria* WESTR., p. 33; cet. vid. sup., p. 15, et  
Add. et Corr. in pag. illam.
- (Pag. 329.) *Epëira patagiata* [= *Epeira patagiata* (CLERCK) 1757].  
Syn.: 1861. *Epeira patagiata* WESTR., p. 36; cet. vid. sup., p. 16.
- (Pag. 331.) *Epëira scalaris* [= *Epeira marmorea* (CLERCK) 1757, Var.  
*pyramidata*].  
Syn.: 1861. *Epeira pyramidata* WESTR., p. 28; cet. vid. sup., p. 9.
- (Pag. 332.) \**Epëira signata* [= *Epeira signata* BLACKW. 1850<sup>1</sup>)].
- (Pag. 333.) *Epëira umbratica* [= *Epeira umbratica* (CLERCK) 1757].  
Syn.: 1861. *Epeira umbratica* WESTR., p. 32; cet. vid. sup., p. 14, et Add.  
et Corr. in pag. 23.
- (Pag. 334.) *Epëira agalena* [= *Epeira agalena* WALCK. 1802].  
Syn.: 1861. *Epeira agalena* WESTR., p. 53; cet. vid. sup., pp. 23, 24, et  
Add. et Corr. in pag. illam.
- (Pag. 336.) *Epëira solers* [= *Epeira sollers* WALCK. 1802].  
Syn.: 1861. *Epeira sollers* WESTR., p. 41; cet. vid. sup., p. 18.
- (Pag. 337.) *Epëira similis* [= *Zilla x-notata* (CLERCK) 1757].  
Syn.: 1861. *Zilla x-notata* WESTR., p. 71; cet. vid. sup., pp. 31, 32.
- (Pag. 338.) *Epëira calophylla* [= *Zilla atrica* (C. KOCH) 1845].  
Syn.: 1861. *Zilla atrica* WESTR., p. 69; cet. vid. sup., p. 31.
- (Pag. 341.) *Epëira acalypha* [= *Epeira acalypha* WALCK. 1802].  
Vid. sup., p. 454.
- (Pag. 342.) *Epëira cucurbitina* [= *Epeira cucurbitina* (CLERCK) 1757].  
Syn.: 1861. *Epeira cucurbitina* WESTR., p. 50; cet. vid. sup., p. 23.
- (Pag. 343.) *Epëira bella* [= *Cercidia prominens* (WESTR.) 1851].  
Syn.: 1861. *Singa prominens* WESTR., p. 63 }  
1861. " *scutifera* ID., p. 66 } ; cet. vid. sup., p. 30.
- (Pag. 345.) *Epëira lutea* [= *Epeira alsine* WALCK. 1802].  
Syn.: 1861. *Epeira lutea* WESTR., p. 38; cet. vid. sup., p. 17.
- (Pag. 346.) \**Epëira ornata* [= *Epeira ornata* (BLACKW.) 1850<sup>2</sup>)].

1) *Epeira signata* BLACKW., DESCR. of some newly disc. spec. etc., in Ann. and Mag. of Nat. Hist., 2 Ser., VI, p. 341.

2) *Epeira ornata* BLACKW., op. cit., ibid., p. 342. See on this species the Add. and Corr. to p. 22, *Epeira Westringii*. — CANESTRINI has described another species under the name of *Epeira ornata*: see CANESTR., Nuovi Aracn. Ital., in Annuario della Soc. dei Naturalisti in Modena, Anno III (1868), p. 200; for this species I propose the name *Epeira Canestrinii*.

- (Pag. 347.) *Epëira ceropegia* [= *Epeira ceropegia* WALCK. 1802].  
Syn.: 1861. *Epeira ceropegia* WESTR., p. 55; cet. vid. sup., p. 24, et *Add. et Corr.* in pag. illam.
- (Pag. 348.) *Epëira adianta* [= *Epeira adianta* WALCK. 1802].  
Syn.: 1861. *Epeira adianta* WESTR., p. 51; cet. vid. sup., p. 23.
- (Pag. 349.) *Epëira fusca* [= *Meta Menardi* (LATR.) 1804].  
Syn.: 1861. *Meta Menardi* WESTR., p. 78; cet. vid. sup., p. 38.
- (Pag. 351.) *Epëira antriada* [= *Meta Merianæ* (SCOP.) 1763].  
Syn.: 1861. *Meta fusca* WESTR., p. 76; cet. vid. sup., p. 36, et *Add. et Corr.* in pag. illam.
- (Pag. 353.) *Epëira celata* [= *Meta Merianæ* (SCOP.) 1763, Var. *celata*].  
Syn.: 1861. *Meta fusca*, Var. *b*, WESTR., p. 76; cet. vid. sup., p. 36, et *Add. et Corr.* in pag. illam.
- (Pag. 354.) *Epëira inclinata* [= *Meta segmentata* (CLERCK) 1757].  
Syn.: 1861. *Meta segmentata* WESTR., p. 80; cet. vid. sup., p. 39, et *Add. et Corr.* in pag. illam.
- (Pag. 355.) *Epëira albimacula* [= *Epeira diodia* WALCK. 1802].  
Vid sup., p. 455.
- (Pag. 357.) *Epëira anthracina* [= *Singa pygmæa* (SUND.) 1830].  
Syn.: 1861. *Singa Herii* WESTR., p. 57; cet. vid. sup., pp. 26 et 455, et *Add. et Corr.* in pag. 26.
- (Pag. 358.) *Epëira diadema* [= *Epeira diademata* (CLERCK) 1757].  
Syn.: 1861. *Epeira diademata* WESTR., p. 26; cet. vid. sup., p. 8.
- (Pag. 360.) *Epëira angulata* [= *Epeira angulata* (CLERCK) 1757].  
Syn.: 1861. *Epeira angulata* WESTR., p. 23 (*ad part.*); cet. vid. sup., p. 3, et *Add. et Corr.* in pag. illam.
- (Pag. 361.) *Epëira bicornis* [= *Epeira arbustorum* C. KOCH 1837].  
Vid. sup., p. 458.
- (Pag. 362.) *Epëira conica* [= *Cyrtophora conica* (PALL.) 1772].  
Syn.: 1861. *Epeira conica* WESTR., p. 40; cet. vid. sup., p. 18.
- (Pag. 364.) *Epëira tubulosa* [= *Singa hamata* (CLERCK) 1757].  
Syn.: 1861. *Singa melanocephala* WESTR., p. 61; cet. vid. sup., p. 28.
- (Pag. 365.) *Epëira calva* [= *Singa albo-vittata* WESTR. 1851].  
Syn.: 1861. *Singa albo-vittata* WESTR., p. 59; cet. vid. sup., p. 28.
- (Pag. 366.) *Epëira Herii* [= *Singa pygmæa* (SUND.) 1830, Var. ?].  
Vid. sup., p. 456.
- (Pag. 367.) TETRAGNATHA [= *Tetragnatha* LATR. 1804].  
See THOR., On Eur. Spid., pp. 50, 62.

- (Pag. 367.) *Tetragnatha extensa* [= *Tetragnatha extensa* (LINN.) 1758].  
Vid. sup., p. 459, et *Add. et Corr.* in pag. illam.
- (Pag. 369.) **DYSDERIDÆ** [= Subordo **Tubitelariæ**, Fam. **Dysderoidæ**].  
Vid. THOR., On Eur. Spid., pp. 109, 110, 152—154.
- (Pag. 369.) **DYSDERA** [= *Dysdera* (LATR.) 1804 + *Harpactes* TEMPL. 1834].  
See THOR., On Eur. Spid., pp. 154, 157.
- (Pag. 370.) *Dysdera erythrina* [= *Dysdera Cambridgii* N.].  
Vid. sup., p. 465, et *Add. et Corr.* in pag. illam.
- (Pag. 371.) *Dysdera rubicunda* [= *Dysdera crocota* C. KOCH 1839].  
Vid. sup., p. 469.
- (Pag. 371.) *Dysdera Hombergii* [= *Harpactes Hombergii* (SCOP.) 1763].  
Syn.: 1861. *Dysdera Hombergii* WESTR., p. 302; cet. vid. sup., p. 153, et  
*Add. et Corr.* in pag. illam.
- (Pag. 373.) **SEGESTRIA** [= *Segestria* LATR. 1804].  
Vid. THOR., On Eur. Spid., pp. 153, 154.
- (Pag. 373.) *Segestria perfida* [= *Segestria florentina* (ROSSI) 1790].  
Vid. sup., p. 469.
- (Pag. 374.) *Segestria senoculata* [= *Segestria senoculata* (LINN.) 1758].  
Syn.: 1861. *Segestria senoculata* WESTR., p. 300; cet. vid. sup., p. 152.
- (Pag. 375.) **SCHÆNOBATES** [= *Schænobates* BLACKW. 1850].  
Vid. THOR., On Eur. Spid., pp. 153, 154.
- (Pag. 376.) \**Schænobates Walkeri* [= *Schænobates Walkeri* BLACKW.  
1850<sup>1)</sup>].
- (Pag. 377.) **OONOPS** [= *Oonops* TEMPL. 1834].  
Vid. THOR., On Eur. Spid., pp. 154, 158.
- (Pag. 377.) *Oonops pulcher* [= *Oonops pulcher* TEMPL. 1834].  
Vid. sup., p. 469.
- (Pag. 379.) **SCYTODIDÆ** [= Subordo **Retitelariæ**, Fam. **Scytodoidæ**  
*ad part.*].  
See THOR., On Eur. Spid., pp. 71, 72, 98—101, 103.
- (Pag. 379.) **SCYTODES** [= *Scytodes* (LATR.) 1804].  
See THOR., On Eur. Spid., pp. 101, 103.
- (Pag. 380.) *Scytodes thoracica* [= *Scytodes thoracica* LATR. 1804].  
Vid. sup., pp. 469, 470.

1) *Schæn. Walkeri* BLACKW., DESC. of some newly disc. spec. etc., in Ann.  
and Mag. of Nat. Hist., 2 Ser., VI, p. 343.

## III.

## SYNONYMICAL REMARKS

ON SOME SPIDERS INCLUDED IN SIMON'S  
'CATALOGUE SYNONYMIQUE DES ARANÉIDES D'EUROPE' ).

Most of the species known to me, that are received into SIMON's 'Catalogue Synonymique', have been already treated of in the foregoing sections of this treatise, and there is in general the less reason to return to them here, as it is easy by means of the index to this work to turn to the passages where I have expressed my opinions regarding them. As I do not possess sufficient materials for a satisfactory discussion of more than a part of the remaining species in SIMON's Catalogue, I shall here confine myself to some remarks on a small number among them, which are either known more generally, or for some reason or other appear to me to be of more general interest. SIMON's catalogue is only a list of names, without descriptions, and his appellations therefore could not be taken up among the synonyms, since it does not any more than other mere lists of names offer any guarantee that the author really understands by a given specific name the species, to which such name rightly belongs, or which he cites.

(Pag. 452.) *Rachus quadrimaculatus*.

***Spermophora senoculata* (DUGÈS) 1836.**

- Syn.*: 1836. PHOLCUS SENOCULATUS DUGÈS, Observ. sur l. Aran., in Ann. d. Sciences Nat., VI, p. 160.  
 1836. " SEX-OCULATUS ID., in CUV., Règne Anim., Arachn., Nouv. [3<sup>e</sup>] Éd., Arachn., Pl. 9, fig. 7.  
 1847. " QUADRI-PUNCTATUS LUC., Explor. de l'Algér., Anim. Artic., I, p. 239, Pl. 15, fig. 2.  
 1847. RACHUS " WALCK., H. N. d. Ins. Apt., IV, p. 459.

1) SIMON, H. N. d. Araignées, pp. 451—528. — As SIMON in his subsequent writings hardly ever refers to this work, but seems to wish to leave it to oblivion, I consider myself bound not to enter upon any criticisms of his lists of synonyms there given, as I had formerly intended (Conf. On Eur. Spid., p. 38). How little these lists are to be trusted, is easily seen f. inst. by comparing that part of SIMON's Catalogue, which treats of the Attoidæ, with his subsequent works on that family.



1866. PHOLCUS SEXOCULATUS SIM., Monogr. d. esp. europ. du genre Pholcus, in Ann. de la Soc. Ent. de France, 4 Sér., VI, p. 119, Pl. II, figg. 8, 9.
1869. SPERMOPHORA SENOCULATA THOR., On Eur. Spid., p. 102.

(Pag. 453.) *Mygalodonta cæmentaria*.

**\*Nemesia Sauvagesii (DORTH.) 1794.**

- Syn.: 1794. ARANEA SAUVAGESII DORTHÈS, Observ. on the struct. and œcon. of some curious spec. of Aran., in Transact. of the Linn. Soc., II, p. 90, Pl. 17, figg. VI, VII.
1798. " CÆMENTARIA LATR., Extr. d'un mém. sur la fam. d. Araignées mineuses, in Bull. d. Sciences, par la Soc. Philomath., II, II, N:o 22, p. 169, figg. 1, A—F.
1798. " " ID., Mém. sur les Ar. min., in Mém. de la Soc. d'Hist. Nat. de Paris<sup>1)</sup>, p. 121, Pl. VI, figg. 1, A—F.
1804. MYGALE " ID., H. N. d. Crust. et d. Ins., VII, p. 164, Pl. LXIII, figg. 1—6.
1807. " CEMENTARIA WALCK., H. N. d. Araignées, 3, 10 (= ♂).
1819. " CARMINANS LATR., Nouv. Dict. d'Hist. Nat., 2e Éd., XXII (sec. WALCK. et DUF.). (= ♂).
- ? 1820. " " DUF., Obs. s. quelques Arachn. quadrupulm., in Ann. gén. d. Sc. phys., V, p. 103, Pl. LXXIII, fig. 4.
1820. " CÆMENTARIA ID., ibid., p. 104, Pl. LXXIII, fig. 5 (= ♀).
1836. " " LATR. et DUGÈS, in Cuv., Règne Anim., Nouv. [3e] Éd., Arachn., p. 34, Pl. I—III.
1871. NEMESIA CÆMENTARIA AUSS., Beitr. z. Kenntn. d. Territ., in Verhandl. d. zool.-bot. Gesellsch. in Wien, XXI, p. 166 (50).

1) In ENGELMANN'S Bibliotheca Hist.-Nat., p. 64, it is stated that these Mémoires, printed in 4:to in the year VII (1798), are but a "réimpression" of the "Mémoires de la Soc. d'Hist. Nat. de Paris. In-folio. Paris 1792". If, as cannot well be doubted, the work here intended is the "Actes de la Soc. d'Hist. Nat. de Paris. Tome Premier. Première Partie. Paris 1792". (Fol.), the statement is completely unfounded. In these "Actes" there is no essay by LATREILLE, and nothing at all about Mining-spiders. — When LATREILLE wrote his "Mém. sur les Araignées mineuses", he did not know of the above cited treatise of his countryman DORTHÈS, "puisque il avoit été adressé à une société de savans étrangers, et qu'il n'étoit pas encore imprimé" (vid. LATR., H. N. d. Crust. et d. Ins., VII, p. 150). According to the title-pages however, DORTHÈS' work was printed four years before LATREILLE'S.

The genera *Cteniza* [LATR.] (BERTH.) and *Nemesia* (SAV. et AUD.) may very well be both allowed to keep their places, as also the specific names *Sauvagesii* (DORTH.) and *Sauvaggi* (ROSSI), which have been independently given, the former to a *Nemesia*, the latter to a *Cteniza*. AUSSERER, who loc. cit. distinguishes these two genera, rightly remarks, p. 165 (49), that the species of the former genus (with *N. cellicola* as its type) are more closely allied to WALCKENAER'S "*Digitigrades inermes*" than to the other Mining-spiders. In these last (among which is *Cteniza*, with *C. Sauvaggi* (ROSSI) as type) the centre fovea of the cephalothorax is  $\cup$ -shaped (open in front), and the head very high; in *Nemesia* on the contrary it is transverse or  $\cap$ -shaped (open behind), and the head comparatively low, as in the "*Digitigrades inermes*" and the "*Plantigrades*" of WALCKENAER'S *Mygale*.

That DUFOUR'S *Mygale carminans* is identical with *M. carminans* LATR., which is supposed to be the male to "*M. cæmentaria*", is by no means as yet certain: DUFOUR states that the bulbus genitalis is "terminé par un bec acéré, comprimé, mais contre l'assertion de LATREILLE nullement bifide". But to this LATREILLE answers (in CUVIER, Règne Anim., 2<sup>e</sup> Éd., IV, p. 230): "J'ai de nouveau vérifié le fait, et je me suis convaincu que je ne m'étais pas trompé".

With *N. Sauvagesii* or *cæmentaria* I am not acquainted. — In the female of *N. cellicola* SAV. et AUD., AUSS. <sup>1)</sup> — which sex was unknown to AUSSERER — the cephalothorax is 8 millim. long (exclusive of the mandibles) and  $6\frac{1}{2}$  millim. broad: it is 1 millim. longer than the metatarsus + tarsus of the 4:th pair of legs. All the tarsi are destitute of spines, and the four posterior tarsi are without scopula, with which the metatarsi and tarsi of the four anterior legs are provided. The anterior centre eyes are separated from each other and from the anterior lateral eyes by an interval pretty nearly equal to the diameter of the centre eyes. The maxillæ have at the inner (anterior) corner of the base a few small short teeth, which do not seem to be arranged in one row. The cephalothorax is blackish brown, without any distinct spots.

O. G. COSTA <sup>2)</sup> has described and figured under the name of *Myg. meridionalis* a spider, which seems to belong to the genus

1) SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 304, Arachn., Pl. I, fig. 1; AUSS., Beitr. z. Kenntn. d. Territ., p. 168 (52); *Mygale cellicola* WALCK., H. N. d. Ins. Apt., I, p. 239. — *Cteniza africana* C. KOCH (Die Arachn., V, p. 10, Tab. CXLVI, fig. 344) is probably the same species as *N. cellicola*.

2) Fauna del Regno di Napoli, Arachn., p. 14, Tav. I, fig. 3.

*Nemesia* (not *Cteniza*). In this *Nemesia meridionalis* (COSTA), which is not mentioned by AUSSERER, all the tarsi are said to be armed with spines; it has dark spots on both sides of the cephalothorax and abdomen, forming radii upon the former, but being on the latter disposed in rows.

(Pag. 453.) *Mygalodonta fodiens*.

***Cteniza Sauvagii* (ROSSI) 1788.**

- Syn.*: 1788. ARANEA SAUVAGII ROSSI, Osserv. insettolog., in Mem. di Mat. e Fis. della Soc. Ital., IV, p. 134, figg. 8, 9 (*sec. EJUSD. Fauna Etr.*)<sup>1)</sup>.  
 1790. " " ID., Fauna Etr., II, p. 138, Tab. IX, fig. 11.  
 1798. " " LATR., Mém. sur les Ar. min., in Mém. de la Soc. d'Hist. Nat. de Paris, p. 125, Pl. VI, fig. 2, A—D.  
 1804. MYGALE " ID., H. N. d. Crust. et d. Ins., VII, p. 165, Pl. LXIII, figg. 7—10.  
 1805. " FODIENS WALCK., Tabl. d. Aran., p. 5.  
 1820. " SAUVAGESII DUF., Observ. s. quelques Arachn. quadripulm., in Ann. gén. d. Sc. phys., V, p. 102, Pl. LXIII, fig. 3.  
 1825. " FODIENS WALCK., Faune Franç., Arachn., p. 4, Pl. 2, figg. 1, 2.  
 1871. NEMESIA FODIENS CARRUCCIO, Sulla più esatta determ. della Nem. fod., in Bull. d. Soc. Ent. Ital., III, p. 55, Tab. I, figg. 5—9, Tab. II, figg. 1—9.  
 1871. CTENIZA SAUVAGII AUSS., Beitr. z. Kenntn. d. Territ., p. 152 (36).

*Mygale ariana* WALCK.<sup>2)</sup> and *Cteniza graja* C. KOCH<sup>3)</sup> are, according to AUSSERER<sup>4)</sup>, independent species of the genus *Cyrtocarenum* AUSS. (= *Cyrtocephalus* THOR. *ad part.*), and not identical with *Cten. Sauvagii* (ROSSI). WALCKENAER'S *M. ariana* ought however in that case to be called *Cyrtocarenum cunicularium* (OLIV.), for it was described for the first time in 1811 by OLIVIER in the Encycl. Méth., VIII, p. 86, under the name of *Mygale cunicularia*. The name *M. ariana* occurs, it is true, in WALCKENAER'S Tabl. d. Aran., p. 6, as early as 1805, but the species is not there in any way charac-

1) "P. 141, fig. VII—X", according to AUSSERER, loc. cit.

2) H. N. d. Ins. Apt., I, p. 239.

3) Die Arachn., III, p. 39, Tab. LXXXVI, fig. 194.

4) Beitr. z. Kenntn. d. Territ., p. 157 (41): *Cyrtocarenum Arianum*; p. 158 (42): *Cyrtoc. grajum*.

terized. WALCKENAER did not describe it before 1837 (in his H. N. d. Ins. Apt., I, p. 239).

(Pag. 454.) *Filistata bicolor*.

***Filistata testacea* LATR. 1810.**

- Syn.*: 1810. FILISTATA TESTACEA LATR., *Consid. gén., cet.*, p. 121.  
 1816. " BICOLOR ID., in *Nouv. Dict. d'Hist. Nat.*, 2<sup>e</sup> Éd., II, p. 468 (*sec.* WALCK., *Faune Franç.*).  
 1817. " " ID., in *CUV.*, *Règne Anim.*, III, p. 83.  
 1825. " " WALCK., *Faune Franç.*, *Arachn.*, p. 11, Pl. VI, figg. 1—3.  
 1836. " " DUF., *Observ. sur la Fil. bicolor*, in *Ann. de la Soc. Ent. de France*, V, p. 527.  
 1839. TERATODES ATTALICUS C. KOCH, *Die Arachn.*, V, p. 6, Tab. CXLVI, fig. 343.  
 1845. FILISTATA BICOLOR LUC., *Explor. de l'Algér.*, *Anim. Artic.*, I, p. 97, Pl. I, fig. 6.  
 1870. " TESTACEA THOR., *On Eur. Spid.*, p. 160.

The genus *Filistata* was, as is generally known, characterized by LATREILLE in 1810 in his "Consid. gén. sur l'ordre naturel composant les Classes d. Crustacés, d. Arachn. et d. Ins."; one species, from "les environs de Marseille", is there adduced under the name of *F. testacea*, but without any description of the *species*. In the *Nouv. Dict. d'Hist. Nat.*, 2<sup>e</sup> Éd., and in the 1<sup>st</sup> Ed. of CUVIER'S *Règne Anim.*, LATREILLE himself changed the name to *F. bicolor*, and the species was afterwards described under that name by WALCKENAER in *Faune Franç.*, *Arachn.*: *F. testacea* LATR. and *F. bicolor* ID. are there taken up as synonymous with *F. bicolor* WALCK. LATREILLE however seems subsequently to have come to the conclusion that his *F. bicolor* or *testacea* and WALCKENAER'S *F. bicolor* were two distinct species: he says in fact in 1831, in his *Cours d'Entom.*, p. 512, concerning the genus *Filistata*: "nous en connaissons trois espèces, deux de l'Europe méridionale, et la troisième de la Guadeloupe"; but that "nous connaissons" does not here mean that he had himself seen three species, or even three specimens of the genus *Filistata*, is evident from his statement on the preceding page (p. 511), where he says that he cannot give the number of the mamillæ in *Filistata*, "n'ayant que deux individus desséchés" of that genus. His two European species must therefore have been, the one *F. testacea* LATR., the other *F. bicolor* WALCK.; for no third European species was at that time known. DUFOUR, who afterwards, in 1836 (*loc. cit.*), gave

a detailed description of the spider, which he from WALCKENAER'S description knew to be that author's *F. bicolor*, had in the mean time sent specimens of it to LATREILLE, who recognized it as his *F. testacea* (vid. DUF., loc. cit., p. 534); and thus the identity of the two species, long ago assumed by WALCKENAER, was fully established. As there is not the least doubt about what spider LATREILLE intended by his *F. testacea*, and as it may be considered as *sufficiently characterized by the description of the genus coupled with the notice concerning the habitat of the species*, it seems to me that there is no reason for abandoning the older appellation *testacea* originally given by LATREILLE and accepting the more recent name *bicolor*; and I therefore call the species *F. testacea* LATR. 1810. — I have found this spider common at Nice, and have also met with it at several other places in Italy. — WALCKENAER asserts (Ins. Apt., IV, p. 376) that the claws of the *mandibles* are, according to the statement of DUFOUR, "finement et longuement pectinés"; but this is of course a mistake: it is the claws of the *tarsi*, of which DUFOUR says that they are "finement et assez longuement pectinés". On these claws see THOR., loc. cit.

(Pag. 481.) *Textrix vestita*.

***Textrix vestita* C. KOCH 1841.**

Syn.: 1841. TEXTRIX VESTITA C. KOCH, Die Arachn., VIII, p. 52, Tab. CCLXVII, figg. 628, 629.

1847. SPARASSUS VESTITUS WALCK., H. N. d. Ins. Apt., IV, p. 438.

In the male the femoral joint has on the outer side a coarse protuberance, and is thicker between the basis and this protuberance than between the protuberance and the apex; the patellar joint is about as long as it is broad, not drawn out at the apex above into a conspicuous tubercle; the tibial joint is somewhat broader than it is long, rounded on the outer side, without any processes. The bulbus, along its outer margin, exhibits a strong, long, black callosus, the posterior end of which is so curved as to enter between the lamina and patellar joint. The bulbus has on the inner side at the base a broad lamina directed inwards, and immediately behind that a stout, black, crooked spine; near the middle of the under side at the base it exhibits a fine, curved, black spine. A long spine is seen curving backwards round and under the extremity of the bulbus. The

vulva consists of a large, somewhat transversal fovea, the anterior margin of which is much more elevated than the posterior, and the bottom of which exhibits anteriorly two longitudinal, almost parallel furrows separated by an intermediate ridge. — Dr L. KOCH has kindly sent me one of C. KOCH's original specimens (from Greece) of this species. I have also specimens from Dalmatia, which I have received of Count E. KEYSERLING.

Another somewhat smaller, but nearly allied species with dark-ringed legs, of which I have received of Prof. CANESTRINI a female specimen from Modena under the name of *T. caudata* L. KOCH (but which seems nowhere to have been described), is easily distinguishable from *T. vestita* (and *T. ferruginea*) by the sternum being yellowish brown *with a black margin and a black longitudinal middle-stripe*, as also by the form of the vulva, which consists of a rather small fovea bounded in front by the emarginated posterior border of a brown, somewhat raised, smooth area, and behind by a narrow, forward-curved costa or raised edge.

(Pag. 481.) *Textrix ferruginea*.

*Textrix ferruginea* C. KOCH 1841.

Syn.: ?1841. TEXTRIX FERRUGINEA C. KOCH, Die Arachn., VIII, p. 50, Tab. CCLXVII, fig. 627.

?1847. SPARASSUS FERRUGINEUS WALCK., H. N. d. Ins. Apt., IV, p. 437.

1869. TEXTRIX FERRUGINEA CANESTR. et PAV., Aran. Ital., in Atti d. Soc. Ital. di Sc. Nat., XI, III (1868), p. 64<sup>1)</sup>.

Of the species which I, with CANESTRINI and PAVESI, take to be identical with *T. ferruginea* C. KOCH, I have collected numerous specimens at Nice and Monaco, among which is one full-grown male. I have also female specimens from the Balearic Isles, for which I am indebted to Dr SÖDERLUND, and from Naples, sent me by Prof. CANESTRINI. It is probable, that some one of the species described by LUCAS under the names of *Lycosoïdes rufipes*<sup>2)</sup> and *Lycosoïdes rufithorax*<sup>3)</sup> is identical with this species; but from LUCAS' descriptions and figures it is hardly possible to say which. — *T. ferruginea*, which in form and colour very nearly resembles *T. vestita* C. KOCH,

1) According to specimens kindly furnished by Prof. CANESTRINI.

2) Explor. de l'Algérie, Anim. Artic., I, p. 124, Pl. IV, fig. 5.

3) Ibid., p. 125, Pl. IV, fig. 4.

is easily distinguished from it by the construction of the male's palpi and the form of the female's vulva. In size *T. ferruginea* is very variable: I have females, in which the cephalothorax is nearly 6 millim. long, while in others, which, judging from the appearance of the vulva, are fully developed, it is not more than 3 millim.

In the male the femoral joint of the palpus is cylindrical, without any protuberance on the outer side. The patellar joint is at the apex, above, drawn out into a short protuberance directed forward and upward. The tibial joint is somewhat irregular: viewed from the side, it is considerably higher than it is long, viewed from above, somewhat broader than it is long: its outer side is produced in the form of a very coarse, sharp spur or spine bent forward near the base and directed forwards and slightly upwards; this spine, which is curved slightly upwards towards the apex, is considerably longer than the tibial joint. The bulbus is in front surrounded by a long, strong, curved spine, and has on the under side an irregular, backward-pointing appendage of a paler colour.

The vulva consists of a large transversal fovea, about double as broad as it is long, the anterior margin of which is curved in an arc backwards, *not* elevated, covered by hair; the posterior margin, which forms a strong brown costa, exhibits in the midst above and somewhat posteriorly a deep and tolerably broad depression. The middle part of that margin is somewhat drawn forward, so that the fovea, when the hair has not been rubbed off, sometimes appears to be imperfectly divided into two. The posterior centre eyes are the largest; the anterior lateral eyes seem to me a little larger than the posterior lateral eyes and the anterior centre eyes. The legs are usually of a uniform yellowish brown colour, but sometimes they show some indications of darker rings, especially on the under side of the posterior thighs. The sternum is of a uniform yellowish brown colour, as in *T. vestita* C. Koch.

This species is perhaps identical with *Aran. coarctata* DUF. 1831<sup>1)</sup>; but as DUFOR describes the eyes of *Ar. coarctata* in the following words: "Les yeux sont disposés absolument comme ceux de *l'Ar. domestique*; ceux de la série postérieure, les intermédiaires surtout, sont un peu plus grands que les autres", I have not dared to adopt the name *coarctata* (DUF.) for the species in question.

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<sup>1)</sup> Descr. et fig. de quelques Aran. nouv. ou mal connues, etc., in Ann. d. Sc. Nat., XXII, p. 358, Pl. X, fig. 1.

(Pag. 457.) *Pythonissa exornata*.

***Gnaphosa exornata* (C. KOCH) 1839.**

- Syn.*: 1839. PYTHONISSA EXORNATA C. KOCH, Die Arachn., VI, p. 63, Tab. CXCVI, figg. 476, 477.  
 1841. DRASSUS EXORNATUS WALCK., H. N. d. Ins. Apt., II, p. 486.  
 1866. PYTHONISSA EXORNATA L. KOCH, Die Arachn.-fam. d. Drassiden, pp. 7, 44, Taf. II, figg. 32, 33.  
 1870. GNAPHOSA EXORNATA THOR., On Eur. Spid., p. 150.

This south-European species probably does not occur in northern Germany. OHLERT's description of "*Pyth. exornata*" in Aran. d. Prov. Preuss., p. 97, is merely an extract from C. KOCH's; the spiders captured by MENGE in Prussia, and by him taken up under the name *P. exornata* in his "Verzeichn. d. Danziger Spinnen"<sup>1)</sup>, to which OHLERT refers, probably belong to *Gnaphosa cinerea* MENGE<sup>2)</sup>, as I conclude from MENGE's not having mentioned *G. exornata* in P. V of his "Preuss. Spinnn.", where *G. cinerea* is described. *G. cinerea*, of which MENGE has kindly sent me specimens, is indeed nearly related to, but quite distinct from *G. exornata*. The 4 anterior metatarsi have in *G. cinerea* 3 or even 4 pairs of spines beneath, not only 2 pairs, as in *G. exornata* (and in *G. molendinaria* (L. KOCH), according to L. KOCH).

(Pag. 461.) *Amaurobius roscidus*.

***Cœlotes segestriiformis* (DUF.) 1820.**

- Syn.*: 1820. DRASSUS SEGESTRIFORMIS DUF., Observ. gén. sur les Arachn., in Ann. gén. d. Sc. phys., VI, p. 297, Pl. XCV, fig. 1.  
 1830. " " WALCK., Faune Franç., Arachn., p. 174.  
 1837. " ATROPOS ID., H. N. d. Ins. Apt., I, p. 627 (*♂ ad part.; non ♀*).  
 ?1837. AMAUROBIUS ROSCIDUS C. KOCH, in HERR-SCHÄFF., Deutschl. Ins., 141 (Deutschl. Crust., Myriap. u. Arachn., 8), 6 (*Conf. Die Arachn., X, p. 114*).  
 1841. CLUBIONA ROSCIDA WALCK., H. N. d. Ins. Apt., II, p. 480.  
 1843. AMAUROBIUS ROSCIDUS C. KOCH, Die Arachn., X, p. 113, Tab. CCCLV, fig. 829.  
 1868. CÆLOTES ROSCIDUS L. KOCH, Die Arachn.-gatt. Amaur., Cœlotes u. Cybæus, in Abhandl. d. Nat.-hist. Gesellsch. in Nürnberg, 1868, pp. 33, 40, fig. XIX.

*Drassus segestriiformis* DUF., which was by WALCKENAER in H. N. d. Ins. Apt. confounded with *D. atropos* WALCK. (see on this

1) Neueste Schrift. d. Nat.-forsch. Gesellsch. in Danzig, IV, 3 (1850), p. 63.  
 2) Preuss. Spinn., V, p. 319, Pl. 57, tab. 183.



species above, p. 437), is certainly identical with *Cælotus roscidus* (C. et) L. KOCH, of which Dr KOCH lately sent me an adult female. DUFOUT's description suits this female exactly, excepting of course that the legs are not "sans piquants remarquables", but armed with spines, which however are slender and appressed and may easily be overlooked or broken; the abdomen is of a uniform black colour above, without any distinct pattern. This specimen of *C. roscidus* had been captured in the Pyrenees, where also DUFOUT found his *D. segestriformis*. — Conf. sup., p. 438.

(Pag. 462.) *Amaurobius ferox*, *A. montanus*.

***Amaurobius claustrarius* (HAHN) 1831.**

- Syn.*: 1831. CLUBIONA CLAUSTRARIA HAHN, Die Arachn., I, p. 114, Tab. XXX, fig. 86.  
 1837. AMAUROBIUS CLAUSTRARIUS C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 15.  
 ?1837. " MONTANUS ID., ibid.  
 ?1839. " " ID., Die Arachn., VI, p. 48, Tab. CXCH, fig. 465.  
 1843. " CLAUSTRARIUS ID., ibid., X, p. 114, Tab. CCCLV, fig. 830.  
 1868. " " L. KOCH, Die Arachn.-gatt. Amaur., Cælotes u. Cybæus, pp. 5, 6, 18, figg. 7, 8.

*Amaurobius montanus* C. KOCH, which L. KOCH (l. c., p. 46) considers as a *Cælotus* unknown to him, is, as may be seen from C. KOCH's description of the vulva, an *Amaurobius* L. KOCH, and probably no other than *Amaurobius claustrarius* (HAHN), L. KOCH. — As regards *A. ferox* (WALCK.), C. KOCH, see above, p. 204; concerning *Drassus atropos* WALCK. and *Ar. terrestris* REUSS, see p. 437.

(Pag. 463.) *Clotho Durandii*.

***Uroctea Durandii* (WALCK.) 1809.**

- Syn.*: 1809. CLOTHO DURANDII WALCK., in LATR., Gen. Crust. et Ins., IV, p. 370.  
 1820. UROCTEA QUINQUE-MACULATA DUF., Descr. d. cinq Arachn. nouv., in Ann. gén. d. Sc. phys., V, p. 200, Pl. LXXVI, fig. 1.  
 1837. CLOTHO DURANDII WALCK., H. N. d. Ins. Apt., I, p. 636.  
 1843. " GUTTATA C. KOCH, Die Arachn., X, p. 87, Tab. CCCXLIX, fig. 814.

1843. CLOTHO STELLATA C. KOCH, *ibid.*, p. 88, Tab. CCCL, fig. 815.  
 1847. " DURANDII LUC., *Explor. d. l'Algér., Anim. Artic.*, I, p. 229.  
 1870. UROCTEA DURANDII THOR., *On Eur. Spid.*, p. 112.

In the specimens of this species that I have seen — all of which are females, from Fiume and Dalmatia, — the colour of the cephalothorax and legs varies from black or piceous to rusty or yellowish brown (which seems always to be the colour in young specimens); in the latter case the cephalothorax is sometimes darker at the borders. The distance of the anterior centre eyes from each other is visibly less than their diameter; they are considerably larger than the anterior lateral eyes, which in their turn are somewhat larger than the posterior eyes, of which the lateral are a trifle smaller than the centre eyes. The distance between the anterior and posterior centre eyes is somewhat less than the greater diameter of the latter, fully as great as that between the two anterior centre eyes, and something greater than that between the anterior centre and lateral eyes; and this last-mentioned distance is again somewhat greater than that between the two lateral eyes of the same side; the posterior centre and lateral eyes are almost contiguous. The abdomen is black or blackish brown; in some specimens the two foremost yellow spots are considerably larger than the other three, in others they are of the same size as, or even smaller than these. The four impressed points in the midst of the back are of the abdomen's dark ground-colour, but are sometimes surrounded by a faint, yellowish ring. The cephalothorax in the largest of my specimens is  $5\frac{1}{3}$  millim. broad, the 1st pair of legs  $15\frac{1}{2}$  millim. long.

I have a *monstrous* specimen of this species, in which the two anterior centre eyes are entirely absent, and the remaining six eyes much smaller than in normal specimens.

C. KOCH's *Clotho guttata* and *C. stellata* are beyond a doubt one and the same species, and identical with *U. Durandii*; whether *C. cycacea* C. KOCH<sup>1)</sup> and *C. Goudotii* WALCK.<sup>2)</sup> are specifically different from this last, is at the least doubtful. Of the former KOCH himself

1) *Die Arachn.*, X, p. 85, Tab. CCCXLIX, fig. 812.

2) *H. N. d. Ins. Apt.*, I, p. 638. — LATREILLE has not, as, from f. inst. C. KOCH's citations, one might be led to suppose, given to this species the name *C. Goudotii*: he only says, speaking of *C. Durandii*: "Cette espèce est répandue dans plusieurs contrées de l'Europe méridionale. J'en connais une seconde qui est entièrement noire et sans taches, et qui a été apportée de Tanger par M. GOUDOT jeune". (*LATR., Cours d'Entom.*, p. 520). — On this short notice WALCKENAER has formed the species *C. Goudotii*.

says, that it "perhaps is only a variety of *C. Durandii*", and the independence of the latter is doubted by LUCAS, loc. cit. If LUCAS is right in this instance, *C. anthracina* C. KOCH<sup>1)</sup> is probably also but a variety of *U. Durandii*. C. KOCH states however, that "*C. Goudotii*"<sup>2)</sup> has small "Dornenzähnen" on the under side of the mammillæ(?), which are wanting in "*C. anthracina*", and are not mentioned in his other species.

(Pag. 467.) *Eucharium triangulifer*.

***Steatoda triangulosa* (WALCK.) 1802.**

- Syn.*: 1802. ARANEA TRIANGULOSA WALCK., Faune Par., II, p. 207.  
 1805. THERIDION TRIANGULIFER ID., Tabl. d. Aran., p. 75.  
 1807. " " ID., H. N. d. Aran., 3, 6.  
 1838. THERIDIUM VENUSTISSIMUM C. KOCH, Die Arachn., IV, p. 114, Tab. CXL, fig. 322.  
 1841. THERIDION TRIANGULIFER WALCK., H. N. d. Ins. Apt., II, p. 324.

Among sundry specimens of this pretty species, which I captured at Nice and Florence, is a ♂ *ad.*, which sex is not mentioned either by WALCKENAER or C. KOCH. This ♂, which agrees in colour with the females, except that the dark rings on the legs are less distinct, is considerably smaller than ♀, its cephalothorax being scarcely more than 1 millim. long. The palpi are tolerably long, and slender; the femoral joint, which is scarcely thicker than the metatarsi of the 1:st pair at the base, is cylindrical and equal in length to the tibial joint and lamina together; the patellar joint is somewhat thicker than the femoral joint, double as long as it is broad, but little thicker towards the apex; the tibial joint, which at the base is something slenderer than the preceding, has the apex pretty regularly and strongly thickened, and drawn out obliquely on the outer side; it is about as long as the patella of the first pair and about double as long as the patellar joint, and as broad at the apex as that joint is long. The clava is somewhat shorter than the tibial joint, scarcely thicker than that joint at the apex and the femora of the 1:st pair; the lamina is short, rounded at the base, where it is received into the apex of the tibial joint, emarginated on the outer side towards the base and also slightly notched at the apex, which

1) Die Arachn., XVI, p. 74, Tab. DLXIII, fig. 1549.

2) Ibid., X, p. 86, Tab. CCCXLIX, fig. 813.

on the inner side is produced forwards so as to form a pointed lobe. — The oldest specific name of this spider, *triangulosa*, must of course be restored.

(Pag. 467.) *Eucharium obscurum*.

***Titanæca quadri-guttata* (HAHN) 1831.**

- Syn.*: 1831. THERIDION 4-GUTTATUM HAHN, Die Arachn., I, p. 84, Tab. XXI, figg. 63, 64.  
 1836. " " ID., Monogr. Aran., VIII, Pl. 2, figg. a, b.  
 1837. ASAGENA 4-GUTTATA C. KOCH, Uebers. d. Arachn. Syst., 1, p. 13.  
 1850. LATRODECTUS 4-GUTTATUS ID., ibid., 5, p. 23.  
 1869. TITANÆCA QUADRI-GUTTATA THOR., On Eur. Spid., p. 124.  
 1872. " " L. KOCH, Ueb. d. Spinnengatt. Titanæca, p. 155.

L. KOCH, loc. cit., has remarked, that *Theridium obscurum* WALCK.<sup>1)</sup> ♀ cannot be the same spider as *Ther. 4-guttatum* HAHN ♀, as WALCKENAER and others suppose: this is immediately evident from the fact that the cocoons and eggs of the two species are altogether different. In *Tit. 4-guttata* the cocoon is, according to L. KOCH, formed of a *yellowish white* woolly web, and the 20—25 eggs are of an *orange-yellow* colour, whereas in *Ther. obscurum* the cocoon is described as *dazzling white*, and the numerous eggs are also stated to be *white*. In WALCKENAER's spider the four white spots, that adorn the abdomen of *Tit. 4-guttata* ♂, are *absent*: in both the male and female of *Th. obscurum* WALCK. the abdomen is said to be of a *uniform dark brown colour*.

*Ther. notatum* WALCK.<sup>2)</sup>, under which WALCKENAER includes *Ther. 4-guttatum* HAHN ♂, is also undoubtedly different from HAHN's spider, as is evident from the description of the spots on the abdomen: the hindmost of these spots are stated in *Th. notatum* to be situated "above the anus", whereas in *Tit. 4-guttata* ♂ they are situated in the *midst* of the back: in the former species the spots are stated to be *dark yellow*, in the latter they are *white*.

*Amurobius Kochii* AUSS.<sup>3)</sup> is not, as I (loc. cit.) supposed, identical with *T. 4-guttata*, but is a separate species of the genus *Titanæca*: vid. L. KOCH, loc. cit., p. 170.

1) Faune Par., II, p. 209; H. N. d. Ins. Apt., II, p. 335.

2) H. N. d. Ins. Apt., II, p. 334.

3) Die Arachn. Tirols, I, in Verhandl. d. zool.-bot. Gesellsch. in Wien, XVII, p. 162, Tab. 7, fig. 5.

(Pag. 467.) *Eucharium civile*.

***Dictyna cictca* (Luc.) 1849.**

Syn.: 1849. THERIDION CIVICUM Luc., Descr. et fig. d'une nouv. espèce d'Aran. appart. au genre Therid., in Ann. de la Soc. Ent. de France, 2 Sér., VIII, p. 181, Pl. 6, No. V.

This little spider, which has acquired a sort of notoriety by its living on the walls of several houses and monumental buildings of Paris in such numbers as to disfigure their appearance with its webs<sup>1</sup>), belongs to the genus *Dictyna* SUND., as I have already above (pag. 212) assumed, and which assumption I find confirmed by the examination of a ♂ and ♀ from Paris, for which I am indebted to the kindness of Mr SIMON. This species is even by its colour distinguished without difficulty from e. g. *D. arundinacea*, which it in size most nearly resembles. The cephalothorax is, in the ♂, dark brown; in ♀, greyish brown with a black lateral border. The head has five white hair-lines; the legs in the female are greyish brown, with dark rings, two on each of the thighs, tibiæ and metatarsi, and one on each of the patellæ; the tarsi are blackish at the apex. In the male the legs are darker and less distinctly annulated. The middle of the back of the abdomen is occupied throughout its entire length by a rather narrow, dark, at the edges, especially posteriorly, sinuated area, the anterior part of which is occupied by an elongated blackish patch somewhat broader behind and extending at least to the middle of the abdomen: this patch is followed by a few pairs of blackish spots, so that the centre area is paler behind, and becomes narrower towards the anus. On each side of this centre field the back of the abdomen is greyish white, bestrewed with small dark points; the sides are darker.

In the male the patellar joint of the palpus is as long as it is broad, scarcely broader than the femoral joint at the apex; the tibial joint is almost as long as, and slightly narrower than the preceding joint; at the base, near the outer side, it is armed with a short, stout, pointed, black tooth, which is considerably shorter than the semi-diameter of the joint. The low, yellowish brown bulbus is enclosed for the greater part of its length by a pretty fine, long, black spine situated close to the lamina and curved round the bulbus.

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1) Conf. DUMÉRIL, Observ. sur le *Ther. civicum*, in Ann. de la Soc. Ent. de France, 2 Sér., VIII, p. 5—11; SIMON, H. N. d. Araignées, p. 173.

Far back, at the outer side, the base of the bulbous is drawn out into a tolerably fine yellowish brown spine, blunt at its extremity, which just at the base is directed inwards, but immediately afterwards curves upward and subsequently downwards and backwards, so that the bulbous, when viewed in profile, seems to be armed behind with a long, downward- and backward-pointing hook. The mandibles are long, curved forwards, and sinuated so as to leave a narrow oval interval between them: their base is *not* armed with a tooth in front near the outer side.

(Pag. 469.) *Iatrodectus malmignathus*.

***Lathrodectus tredecim-guttatus* (ROSSI) 1790.**

- Syn.*: 1790. ARANEA 13-GUTTATA ROSSI, Fauna Etr., II, p. 136, Tab. IX, fig. 10.  
 1805. LATRODECTUS 13DECIM-GUTTATUS WALCK., Tabl. d. Aran., p. 81.  
 1806. THERIDION TREDECIM-GUTTATUM LATR., Gen. Crust. et Ins., I, p. 98.  
 ?1825-7. LATRODECTUS ARGUS SAV. et AUD., in Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 353, Arachn., Pl. III, fig. 10.  
 1838. " 13-GUTTATUS C. KOCH, Die Arachn., IV, p. 39, Tab. CXIX, fig. 273.  
 1838. " CONGLOBATUS ID., *ibid.*, p. 41, Tab. CXIX, fig. 274.  
 1841. " MALMIGNATUS WALCK., H. N. d. Ins. Apt., I, p. 642.  
 ?1841. " OCULATUS ID., *ibid.*, p. 645.  
 ?184.. " ARGUS LUC., in WEBB et BERTHELOT, H. N. d. Iles Canaries, Entom., p. 35, Pl. 6, fig. 6.

The synonyms of the species of the genus *Lathrodectus* are very difficult to determine, for almost all the writers who have hitherto occupied themselves with the study of these animals, have, to distinguish the species, fixed their attention almost exclusively on the differences that present themselves in the *colour and markings*, which however can be very variable in one and the same species of this genus. The independence of most of the hitherto described species is therefore very problematical: it is not even certain, that more than one species of *Lathrodectus* is met with in Europe. DUGÈS<sup>1)</sup>, as is well known, thinks, that not only the Egyptian *L. argus* SAV. et AUD. or *L. oculatus* WALCK., but also *L. lugubris* (DUF.), *L. erebus* SAV. et AUD. and *L. venator* SAV. et AUD. are only varieties of *L. 13-guttatus*. *L. venator*<sup>2)</sup> would seem however not to belong to the

1) Observ. sur les Aran., in Ann. d. Sc. Nat., 2 Sér., VI, p. 196.

2) Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 354, Arachn., Pl. III, fig. 11.

genus *Lathrodectus*, but rather to *Lithyphantes* THOR., judging from the position of the eyes and the low clypeus<sup>1</sup>). Again as regards *L. argus*, DUGÈS is probably right; and respecting this form AUDOUIN himself says loc. cit. that it is "peut-être une simple variété d'âge" of *L. 13-guttatus*. Just such a variety depending upon age (♀ *jun.*), *L. conglobatus* C. KOCH appears to me most assuredly to be<sup>2</sup>). In a full-grown male from Corsica, preserved in spirit of wine, which, together with a normally marked full-grown female from the same place, I have been favoured with by SIMON, the colour is very nearly such as in C. KOCH's figure of *L. conglobatus*. The abdomen farthest in front has a white curved line, and after that three rows of white, in the middle greyish (in living specimens probably red) spots, four in each row, of which the first in the middle row is triangular or somewhat rhombish, the last in the same row has the form of a short indented band, which seems to consist of three united spots; all the other spots are rounded. The thighs and tibiae are brownish yellow, broadly black at the extremity, the metatarsi and tarsi al-

1) Neither is *L. ornatus* LUC. 1847 (Explor. de l'Algér., Anim. Artic., I, p. 233, Pl. 14, fig. 8) a *Lathrodectus*, but a *Lithyphantes*, as one may perceive both from the position of the eyes and the structure of the male's palpi. Of this species (no doubt = *Phrurol. hamatus* C. KOCH 1839, Die Arachn., VI, p. 105, Tab. CCVI, figg. 507, 508) I have myself examined specimens from Egypt. That LUCAS was often bitten by this spider without any disagreeable consequences therefore proves nothing respecting the dangerousness or harmlessness of the *Lathrodectus*-species. *Latr. distinctus* BLACKW. (Descr. of newly disc. Spid. capt. . . in . . Madeira, in Ann. and Mag. of Nat. Hist., 3 Ser., IV, p. 260 (7)) is certainly also a *Lithyphantes*. — *Lathrodectus* differs from *Lithyphantes* not only by the lateral eyes being much farther apart in the former than in the latter genus, but by the clypeus forming, beneath the transverse depression just under the eyes, a coarse, projecting and, when viewed in profile, convex callus in *Lathrodectus*, which is not the case in *Lithyphantes*. The palpi of the males are also different in these two genera. As L. KOCH has shown (Die Arachn. Austral., p. 280), the mandibles in *Lathrodectus* coalesce at the base, as in *Pholcus* etc.; this is also sometimes the case in *Lithyphantes*, f. inst. in *L. dispar* (DUF.) l. *lunatus* (C. KOCH).

2) According to LAMBOTTE the colour varies with the age: "les jeunes araignées de l'année", says he, "sont d'un noir très-foncé, brillant, avec des taches rondes d'un blanc éclatant; ces taches sont beaucoup plus grandes que dans un âge plus avancé . . . . Lorsqu'elles ont pris de l'accroissement, les taches changent de formes, les latérales s'allongent transversalement, les antérieures se réunissent souvent; celles de la ligne médiane affectent ordinairement la forme de coeur de carte à jouer, la couleur en est jaune citron ou rouge de minium dans les femelles, dans les mâles elles sont d'un rouge vif au centre et plus pâle à la circonférence; elles sont aussi plus rondes. Le fond n'est plus aussi foncé ni aussi bril-

most entirely brownish yellow. This male perfectly resembles the figure LUCAS loc. cit. has given of *L. argus* ♂, except that in this last the number of spots on the abdomen is six in the middle row and five in each of the others. As regards *L. erebus* SAV. et AUD.<sup>1)</sup> which is probably identical with *L. lugubris* (DUF.) 1820<sup>2)</sup>, I can hardly venture, with DUGES and BLACKWALL<sup>3)</sup>, to assume that that form is only a variety of *L. 13-guttatus*, because its vulva, judging from SAVIGNY's figure, is at the hinder border equably and simply curved, which is *not* the case in *L. 13-guttatus*. — The following European species of this genus appear to me to be tolerably dubious: *Latrod. martinus* SAV. et AUD.<sup>4)</sup>, *Therid. 5-guttatum* KRYN.<sup>5)</sup>, *L. lugubris* MOTSCH.<sup>6)</sup>, *L. hispidus* C. KOCH<sup>7)</sup> and *L. Schuchii* ID.<sup>8)</sup>.

VAN HASSELT<sup>9)</sup> is of opinion that even several other, *exotic* species, *L. mactans* (FABR.), *L. perfidus* WALCK., *L. variolus* WALCK. etc. are mere varieties of *L. 13-guttatus*. This appears to me hardly probable; but until specimens of both sexes of these forms have been found and accurately described, nothing certain can be said upon the subject. Thus much only I think I may affirm, that the South-American spider (from Curaçao, Aruba, Bonaire etc.), which VAN HASSELT

lant que dans les jeunes". LAMBOTTE, Notice sur le Thér. malmignatte, in Bull. d. l'Acad. Roy. de Sciences de Bruxelles, IV (1837), p. 491.

1) Descr. d. l'Égypte, 2<sup>e</sup> Éd., XXII, p. 352, Arachn., Pl. III, fig. 9.

2) *Theridion lugubre* DUF., Descr. de six Arachn. nouv., in Ann. gén. d. Sciences phys., V, p. 355, Tab. LXIX, fig. 1. — The spider which I (On Eur. Spid., p. 96) took to be *L. lugubris* (DUF.), is not a *Lathrodectus*, but a *Lithyphantes*, viz. *L. dispar* (DUF.) or *Phrurolithus lunatus* C. KOCH (= *Latr. martinus* SAV. et AUD.?). on this species see above, p. 94.

3) Notes on Spid. etc., in Ann. and Mag. of Nat. Hist., 3 Ser., XX, p. 212 (12).

4) Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 354.

5) "Totus aterrimus, villosus; abdomine magno, globoso, supra thoracem tribus, ante tubos textorios binis, guttis sanguineis". KRYNICKI, Arachnogr. Ross. Dec. prima, in Bull. de la Soc. Imp. d. Nat. de Moscou, Année 1837, p. 75, Tab. VI, fig. 2.

6) "Totus aterrimus, brevissime villosus; abdomine magno, globoso, punctis quatuor in dorso impressis; subtus leviter infuscato, ante tubulos textorios linea transversa sub-sinuata flava; tarsis infuscatis". MOTSCHOUJSKY, Not. sur deux Araign. venim. de la Russie mérid., *ibid.*, Année 1849 (T. XXII), p. 290, Tab. II, figg. 3, 4.

7) Die Arachn., III, p. 9, Tab. LXXV, fig. 166.

8) *Ibid.*, III, p. 10, Tab. LXXV, fig. 167.

9) Studien over den z g. Curaçaosche Oranje-Spin, in Tijdschr. voor Entom., III, pp. 46—66.



has described and figured under the name of "*L. malmignattus*, Var. *tropica*"<sup>1)</sup>, is by no means identical with the European *L. malmignatus* WALCK. or *L. 13-guttatus* (ROSSI). Its way of living appears to be different from that of the ordinary "marmignatto", for it is said to dwell on trees, bushes and herbs, whereas this latter or *L. 13-guttatus* is stated to live in the open fields or under stones, sheaves of grain and the like. To say nothing of the design formed by the distribution of the colours on the abdomen, which in normally marked specimens deviates considerably from that of *L. 13-guttatus*, the vulva also in VAN HASSELT's species is somewhat different, being formed of a transverse, deep fovea, which is broadest in the middle and tapers towards the ends, and the anterior margin of which is slightly sinuous, while the posterior margin forms an arc with its convexity backwards and is *not* incised triangularly in the middle. Of this species Dr VAN HASSELT has kindly sent me four females: they are smaller than *L. 13-guttatus* ♀, the cephalothorax only 3 millim. long, the 1st pair of legs  $16\frac{1}{2}$  to  $17\frac{1}{2}$  millim., their tibia about 4 and their patella about  $1\frac{1}{2}$  millim. As in *L. 13-guttatus*, the eyes are disposed in two parallel rows, which, when viewed from above, are slightly curved backwards; the distance between the two lateral eyes is a trifle greater than that between the anterior and posterior centre eyes; the anterior row is slightly curved downward, and its lateral eyes are situated a trifle farther from its centre eyes than these latter from each other; the posterior centre eyes are considerably more distant ( $1\frac{1}{2}$  times or twice as far) from the posterior lateral eyes than from each other. This *L. malmignattus*, var. *tropica* VAN HASS., is undoubtedly identical with *Aranea curacaviensis* MÜLL.<sup>2)</sup> and *Theridion curassavicum* HÉRING, OZAN.<sup>3)</sup>, and may therefore for the present be called *L. curacaviensis* (MÜLL.) 1776. It ap-

1) Loc. cit., p. 62, Pl. V, figg. 1—6.

2) "*Ar. Curacaviensis*: Klein, und nicht viel grösser als eine mittelmässige Hausspinne; der Farbe nach braun, an jeder Seite ein Pomeranzen-flek, daher sie auf der Insel Curaçao *Oranjes* heissen; unter den Wurzeln und Kräutern; deren Biss Menschen und Thiere unsinnig macht". P. L. S. MÜLLER, LINNÆI Vollständ. Natur-Syst., Supplem. u. Register Band, p. 342 (according to GÖTZE, LISTER's Naturgesch. d. Spinn., p. 266).

3) Conf. OZANAM, Étude sur le venin des Arachn., p. 29. HÉRING, whose work on this spider is unknown to me, has, according to OZANAM, not given any description of it, but only treated of the effects of its bite.

pears to me very uncertain whether *L. mactans* (FABR.) 1775 <sup>1)</sup> and *L. perfidus* WALCK. <sup>2)</sup> belong to the same species as *L. curacaviensis*; I should be more inclined to aggregate to it *L. variolus* WALCK. <sup>3)</sup> which is perhaps the male of *Ther. verecundum* HENTZ <sup>4)</sup> 1850 and *Ther. lineatum* ID. <sup>5)</sup>; but the habits of these species appear to be somewhat different.

In the female *L. 13-guttatus* in my possession, the cephalothorax is  $4\frac{1}{2}$  millim., the 1:st pair of legs 24, the 2:nd  $16\frac{1}{2}$ , the 3:rd 13, the 4:th 22 millim. long. The tibia of the first pair is  $5\frac{1}{2}$ , the patella  $2\frac{1}{4}$  millim. long, and this tibia is therefore longer than the cephalothorax and more than double as long as the patella. The distance between the two lateral eyes on the same side is rather greater than that between the anterior and posterior centre eyes; the anterior row is slightly curved downwards, its two centre eyes, which are situated on a common protuberance, are separated from

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1) Syst. Ent., p. 432. — *L. mactans* is not identical with *L. scelio* THOR. and *S. Hasseltii* THOR. (Aran. nonnullæ Nov. Holl., in Öfvers. af Vet.-Akad. Förhandl., XXVII (1870), pp. 369, 370): see L. KOCH, Die Arachn. Austral., p. 280. — L. KOCH (loc. cit., p. 278) thinks that *L. scelio*, of which only the female is known, and *L. Hasseltii*, of which ♂ *ad.* and ♀ *jun.* have been described, belong to one and the same species: if this really be the case, I wish that the species may be called *L. Hasseltii*.

2) H. N. d. Ins. Apt., I, p. 647.

3) Ibid., p. 648.

4) *Theridium verecundum*. "Deep black, glossy; abdomen with blood-red spots underneath, which sometimes extend above in a chain, and with some waving white lines anteriorly, which are sometimes wanting; feet 1. 4. 2. 3. Male slender, abdomen with orange and white spots". HENTZ, Descr. and fig. of the Aran. of the U. S., in Boston Journ. of Nat. Hist., VI, p. 280, Pl. X, figg. 1, 2. The species is said to be very common in North and South Carolina, Georgia, Alabama etc., "under stones, logs, or clods of earth, where it makes a web, the threads of which are so powerful as to arrest the largest hymenopterous insects, such as humble-bees". Of the ♂ *ad.* HENTZ says: "It has always been found on the top of weeds in a small web, and never under stones near the females".

5) *Theridium lineatum*. "Cephalothorax blackish; abdomen deep purple, or reddish black, with several diagonal white lines, and a succession of red spots edged with yellow, and sometimes united in the form of a band; a red spot underneath also; feet blackish, usually varied with yellow. 1. 4. 2. 3. Male with the same markings". HENTZ, loc. cit., p. 281, Pl. X, fig. 3. — The male there figured is evidently *imperfectly developed*, and HENTZ himself suspects it may belong to *T. verecundum*. This form also is very common in North Carolina and Alabama, where it "is usually found under stones, logs, or clods, always near the ground."

each other by a distance at least as great as the diameter of one of these eyes; their distance from the lateral eyes is half as much again as their distance from each other. The distance between the posterior centre and lateral eyes is double that between the two centre eyes, the distance of which is equal to the diameter of a centre eye. The vulva is formed of a transverse, almost triangular opening or fovea, the base or posterior margin of which is in the middle *triangularly notched*, almost ---shaped.

The male is considerably smaller than the female, judging at least from the specimen I have seen: its cephalothorax is a little more than 2 millim., the 1st pair of legs  $16\frac{1}{2}$ , their tibia 4, their patella 1 millim. The position of the eyes is a little different from that in the female: the distance between the lateral eyes is *not* greater, but on the contrary *a trifle less* than that between the anterior and posterior centre eyes, and the anterior centre eyes are somewhat nearer to the lateral eyes than to each other. The area of the four centre eyes is not, as in the female, evidently broader behind, but, as nearly as may be, equally broad before and behind. The patellar joint of the palpus is very convex above, but little longer than it is broad; the tibial joint is far shorter than the patellar joint, and is on the outer side drawn out into a broad, thin, brown lobe which seems to be firmly attached to the lamina; while on the outer side it runs out into a very long, fine, black, semicircularly outward-curved, downward-directed spine. The clava is short, broadly truncated in front, of the same peculiar general form as in *L. Hasseltii* THOR. ♂<sup>1)</sup> and probably the other species of this genus. The lamina is yellowish brown, much broader towards the apex, truncated in front, almost half-bell-shaped; on the inner side it is drawn out into a long, narrow, downward-pointing, at the apex hairy lobe, at the extremity of which the bulbus exhibits a downward-pointing, slender, sinuated, pale-coloured appendage. The bulbus has at its apex a very long spine, rolled up into a (plane) spiral, which occupies the truncated extremity of the clava.

(Pag. 471.) *Dictyna viridissima*.

***Dictyna viridissima* (WALCK.) 1802.**

*Syn.*: 1802. ARANEA VIRIDISSIMA WALCK., Faune Par., II, p. 212.

1805. DRASSUS VIRIDISSIMUS ID., Tabl. d. Aran., p. 46.

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1) See preceding page, note 1.

1807. DRASSUS VIRIDISSIMUS WALCK., H. N. d. Aran., 4, 9.  
 1830. " " ID., Faune Franç., Arachn., p. 176.  
 1834. THERIDION VIRIDE REUSS, Zool. Misc., Arachn., in Mus. Senckenb.,  
 I, p. 239 (246), Tab. XVI, fig. 11.

*D. variabilis* C. KOCH<sup>1)</sup> is quite a different species from *D. viridissima*, to which it is aggregated by WALCKENAER: vid. sup., p. 434, where some of the differences which these two species present, are pointed out. In almost all the females of *D. viridissima* that I have seen, the belly exhibits, behind, a rather large, heart-shaped or oval, in front emarginated dark patch, which in its hinder part includes the mamillæ. In *D. variabilis* this patch is wanting.

I strongly suspect that *Drassus flavescens* WALCK. 1830<sup>2)</sup>, which WALCKENAER says that he "often confounded with *Dr. viridissimus*", is identical with *Diet. variabilis* C. KOCH. Should this be the case, WALCKENAER'S specific name has the priority. There is probably no reason to attach any great importance to the differences in the structure of the oral apparatus in *Dr. viridissimus* and *Dr. flavescens*, which WALCKENAER says that he observed: they appear rather to indicate the different sexes of *Diet. viridissima* and *D. variabilis* than different species. The description of the maxillæ of *Dr. viridissimus* appears to me taken from a ♂ of *Diet. viridissima* or *D. variabilis*, the description of the same organs of *Dr. flavescens* agrees better with those of the females of these two species.

(Pag. 480.) *Philoica cicurea*.

***Tegenaria cinerea* (PANZ.) 1793.**

- Syn.: 1793. ARANEA CINEREA PANZ., Faun. Ins. Germ., 4, 23.  
 1793. " CICUREA FABR., Ent. Syst., II, p. 410.  
 1835. TEGENARIA CICUREA C. KOCH, in HERR.-SCHÄFF., Deutschl. Ins.,  
 128, 16 (sec. Die Arachn.).  
 1841. " " ID., Die Arachn., VIII, p. 40, Tab. CCLXIV,  
 fig. 620.  
 1850. PHILOICA CICUREA C. KOCH, Uebers. d. Arachn.-Syst., 5, p. 26.  
 1870. TEGENARIA CINEREA THOR., On Eur. Spid., p. 119.  
 1871. CICURINA CICUR MENGE, Preuss. Spinn., IV, p. 272, Pl. 50, tab. 159.

By PANZER this spider is not called *Ar. cicurea*, but *Ar. cinerea*: in his Faun. Ins. Germ. we read loc. cit. under the head of 'Aranea cinerea. Die aschgraue Spinne': "*Aranea cinerea*: abdomine

1) Die Arachn., III, p. 29, Tab. LXXXIII, fig. 187.

2) Faune Franç., Arachn., p. 179.

cinerascete, thorace pedibusque testaceis. — FABRIC. Ent. Syst. *Tom. ined.* — Hier in Häusern und Gemächern nicht selten". Under the figures stands: "*Aranea cinerea* FABR." FABRICIUS again in his Ent. Syst. under the head of '*Ar. cicurea*' cites "PANZ. Faun. Ins. Germ. 2. tab. 3", where '*Carabus attenuatus* FABR.' is described and figured. It is therefore clear that PANZER and FABRICIUS cite one another, without having seen the contemporaneous works to which they refer. *Cicurea*, in Ent. Syst., cannot be an error of the press for *cinerea*, since FABRICIUS, p. 423 of the same work, calls another species "*Ar. cinerea*" (= *Trochosa cinerea*). FABRICIUS had probably received from PANZER, to be described in his Syst. Ent., under the name of *Ar. cinerea*, specimens of the spider in question, and has then either, in order to avoid collision with his own *Ar. cinerea*, changed PANZER's name into *cicurea*, or, as appears to me most probable, he has misread the name and really supposed that the species was to be called *cicurea*. *Cicureus* is however a word which does not exist in the Latin language. MENGE has on this account altered the name of the species to *cicur*: but I see no reason why it should not retain the name *cinerea* originally given to it by PANZER, and I therefore call this spider *Tegenaria cinerea* (PANZ.).

(Pag. 489.) *Singa herii*, *S. nigrifrons*.

***Singa Herii* (HAHN) 1831.**

- Syn.*: 1831. EPEIRA HERII HAHN, Die Arachn., I, p. 8, Tab. II, fig. 5.  
 1837. SINGA " C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 6.  
 1841. EPEIRA " WALCK., H. N. d. Ins. Apt., II, p. 89 (*salt. ad part.*).  
 1870. SINGA " THOR., Rem. on Syn., p. 26.  
 1871. " " AUSS., Neue Radspinnen, in Verhandl. d. zool.-bot. Gesellsch. in Wien, XXI (1871), pp. 824 (10), 826 (12).

**Var.  $\beta$ , *nigrifrons*:**

- Syn.*: 1845. SINGA NIGRIFRONS C. KOCH, Die Arachn., XI, p. 153, Tab. CCCXCIII, fig. 949.  
 1866. " " MENGE, Preuss. Spinn., I, p. 85, Pl. 13, tab. 23, L-N.  
 1871. " " AUSS., Neue Radspinnen, p. 826 (12).

The colour of the abdomen in this species is extremely variable: Conf. HAHN, loc. cit. In some specimens the pars cephalica is *black* (var. *nigrifrons*); such specimens have been sent to me, together with

examples of the ordinary or chief variety, by Dr L. KOCH under the name of *S. Herii*. MENGE's type-specimen of his *S. nigrifrons*, which this author had the kindness to lend me, is perfectly similar to the variety of "*S. Herii*" with the pars cephalica black, which I had received from Dr KOCH. — The male's abdomen is sometimes destitute of a reddish yellow longitudinal middle-band, being in this case of a uniform blackish or brown colour above. — On *S. Herii* see more above, pp. 26 and 457.

(Pag. 490.) *Miranda hirsuta*.

***Epeira Armida* SAV. et AUD. 1825--27.**

- Syn.*: 1825 -27. EPEIRA ARMIDA SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 337, Arachn., Pl. II, fig. 8.  
 1831. " HIRSUTA HAHN, Die Arachn., I, p. 13, Tab. III, fig. 9.  
 1837. MIRANDA HIRSUTA C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 4.  
 1841. EPEIRA HIRSUTA WALCK., H. N. d. Ins. Apt., II, p. 114.  
 1848. MIRANDA HIRSUTA C. KOCH, Die Arachn., XVI, p. 75, Tab. DLXIII, fig. 1550.

On this species see farther on, "*Add. and Corr.*" to p. 24, *Epeira ceropegia* WESTR.

(Pag. 491.) *Atea melanogaster*.

***Dipœna melanogaster* (C. KOCH) 1845.**

- Syn.*: 1845. ATEA MELANOGASTER C. KOCH, Die Arachn., XI, p. 143, Tab. CCCXII, figg. 941, 942.  
 1863. THERIDIUM CONGENER CAMBR., Descr. of 24 new spec., *et.*, in Zoologist, 1863, p. 8576 (16).  
 1869. DIPœNA MELANOGASTER THOR., On Eur. Spid., p. 91.

(Pag. 491.) *Epeira silvicultrix*.

***Epeira silvicultrix* C. KOCH 1835.**

- Syn.*: 1835. EPEIRA SILVICULTRIX C. KOCH, in HERR.-SCHÆFF., Deutschl. Ins., 131, 21, 22 (*sec. Die Arachn.*)  
 1845. " " ID., Die Arachn., XI, p. 131, Tab. CCCXC, figg. 932, 933.

This species much resembles *E. umbratica*, with which it may easily be confounded, but it is generally only half as large: in a ♂

and ♀ kindly furnished me by L. KOCH, the cephalothorax is only  $3\frac{1}{3}$  millim. long <sup>1)</sup>. That which immediately indicates, that *E. silvicultrix* is a perfectly independent species, is the palpi of the male: the tibial joint is much dilated inwards and somewhat downwards to a thick, almost three-sided, at the apex blunt lobe, which at its anterior margin, near its apex, carries two long, at the base very thick, gradually tapering bristles, which curve rapidly upwards and outwards, running out into a very long, fine point. On the outer side also the tibial joint is drawn out into a lobe, which however is considerably shorter and narrower than that on the inner side. At the base of the upward turned edge the lamina exhibits a short, stout, blunt process. In *E. umbratica* ♂, the tibial joint has on the inner and under side of the apex a small, blunt, toothlike process, which bears some hairs of the usual form; there is a large lobe on the outer side of this joint, directed almost downward; the process at the base of the lamina is at the apex produced into an almost triangular little lobe, forming a right angle with the process and directed outwards and forwards. In *E. umbratica* ♂ the bulbus has near the middle of the under side a short and broad process, which at the apex sends out two pointed branches in opposite directions: the larger of these branches is directed outwards, and is almost *triangular*, (not bifid, as the large process of the bulbus is in f. inst. *E. scolopetaria*). In *E. silvicultrix* the corresponding process has the form of a *short and stout hook* with the apex directed inwards. The female of *E. silvicultrix* differs from *E. umbratica* ♀ by its smaller size, its pale coxæ and the generally more distinct marking; moreover the notch in the anterior border of the abdomen, which is observed in *E. umbratica*, seems to be *absent* in *E. silvicultrix*. Also the vulvæ exhibit some difference; in *E. silvicultrix* this organ is very small, black, and drawn out into a very short and small, conical, black scapus, which is directed downwards and forwards, and which, on the hinder side (that turned towards the belly) has an oval depression; in *E. umbratica* the vulva, which is black in front but paler behind, is at its hinder border produced into a short, backward-turned, reddish brown continuation, which is tongue-like and slightly excavated longitudinally. — Respecting *E. silvicultrix* OHL., see above, p. 17.

1) Almost equally small specimens of *E. umbratica* are however sometimes met with: in one ♂ (Swedish) and one ♀ (from Venice) in my collection the cephalothorax is only  $3\frac{3}{4}$  millim. long.

(Pag. 496, 497.) *Nephila fasciata*, *N. transalpina*.

***Argiope Bruennichii* (SCOP.) 1772.**

- Syn.*: 1772. ARANEA BRUNNICHII SCOP., Obs. zool., in Ann. V Hist.-Nat., p. 125.  
 1773. " SPECIOSA PALL., Reise durch verschied. Prov. d. Russ. Reichs, II, p. 732.  
 1776. " ZEBRA SULZ., Gesch. d. Ins., p. 254, Tab. XXIX, fig. 15.  
 1787. " FORMOSA CYRILL., Eutom. Neap. spec. I, p. 7, Pl. 9 (sec. WALCK.).  
 1787. " PULCHRA RAZOUM., Lettre.... sur une Araignée, in Journ. de Phys., XXXI, p. 372.  
 1789. " " ID., H. N. du Jorat, I, p. 244.  
 1789. " FASCIATA OLIV., Encycl. méth., IV, pp. 188, 189.  
 1789. " FORMOSA VILL., LINN. Ent., IV, p. 130; Nomencl. Ic., Pl. XI, fig. 10.  
 1789. " CASPIA GMEL., in LINN. Syst. Nat., Ed. 13, I, v, p. 2959 (Cfr. LEPECHIN, Tagebuch der Reise, cet., I, p. 316, Taf. 16, fig. 1).  
 1790. " PHRAGMITIS ROSSI, Faun. Etr., II, p. 128, Tab. III, fig. 13, Tab. IX, fig. 5.  
 1805. EPEIRA FASCIATA WALCK., Tabl. d. Aran., p. 55.  
 1826. SEGESTRIA PULCHRA RISSO, H. N. d. princ. prod. d. l'Eur. mér., V, p. 160.  
 1827. ARGIOPE FASCIATA SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 329.  
 1830. EPEIRA FASCIATA WALCK., Faune Franç., Arachn., p. 234, Pl. IX, fig. 2.  
 1835. MIRANDA TRANSALPINA C. KOCH, in HEER.-SCHÆFF., Deutschl. Ins., 128, 14 (sec. Die Arachn.).  
 1837. EPEIRA SPECIOSA KRYNICKI, Arachnogr. Ross. dec. prima, in Bull. de la Soc. Imp. d. Nat. de Moscou, Année 1837, p. 76.  
 1839. NEPHILA TRANSALPINA C. KOCH, Die Arachn., V, p. 33, Tab. CLIII, figg. 356, 357.  
 1841. EPEIRA SPECIOSA EICHW., Fauna Caspio-cauc., in Nouv. Mém. de la Soc. Imp. d. Nat. de Moscou, VII, p. 241, Tab. XXXVII, fig. 5.  
 1845. NEPHILA FASCIATA C. KOCH, Die Arachn., XI, p. 159, Tab. CCCXCIV, fig. 954.  
 1868. ARGIOPE BRÜNNICHII THOR., Om Aranea lobata PALL., in Öfvers. af af Vet.-Akad. Förhandl., XXIV (1867), p. 591.

When OLIVIER in 1789 described this species under the name of *Ar. fasciata*, it had already, as may be seen from our list of synonyms, received no less than five other denominations, among which *Ar. Bruennichii* [*Brunnichii*] SCOP. is the oldest <sup>1)</sup>. *Ar. fasciata*

1) SCOPOLI's description is as follows: "ARANEA BRUNNICHII. Diagn. *Statura A. Linnæi, sed pedes longiores. Abdomen fasciis flavis nigrisque varium. Vidi*



FABR. 1775 (from Madeira) probably no more belongs to this species than *Ar. fasciata* POIRET 1787, but is most likely identical with *Ar. trifasciata* FORSK. or *Ep. aurelia* SAV. et AUD. (see the species next following). At all events the name *fasciata* for the spider before us is more recent than that given by SCOPOLI, which must therefore be restored. — Among the synonyms of this species WALCKENAER includes "*Ar. sacrariorum* PALLAS", but this is not right. PALLAS has nowhere called it *Ar. sacrariorum*: he only states, that his *Ar. speciosa* had received from the Cossacks of Jaik a name, which would be rendered into Latin by the words *aranea sacrariorum*. — That the species does not belong to the genus *Nephila* LEACH, but to *Argiope* SAV. et AUD., I have elsewhere demonstrated (On Eur. Spid., p. 51).

As regards *Nephila transalpina* C. KOCH, KOCH himself informs us (Die Arachn., XI, p. 160), that it is nothing else than a specimen of his *N. fasciata*, the colours of which had faded.

*Epeira fasciata* CANTOR<sup>1)</sup> is a species quite different from *E. fasciata* WALCK., CET., or *Argiope Bruennichii* (SCOP.).

(Pag. 497.) *Argyopes aurelia*.

\**Argiope trifasciata* (FORSK.) 1775.

- Syn. 1775. ARANEA TRIFASCIATA FORSK., Descript. Anim., p. 86.  
 1775. " " ID., Icon. rer. natural., p. 7, Tab. XXIV, fig. E.  
 ?1775. " FASCIATA FABR., Syst. Ent., p. 433.  
 ?1787. " " POIRET, Sur quelques Ins. de Barbarie, in Obs. sur la Phys., sur l'Hist. Nat. et sur l. Arts (Journ. de Phys.), XXXI, p. 114, Pl. I, fig. 3.  
 1825—7. ARGIOPE AURELIA SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 331, Arachn., Pl. II, fig. 5.  
 1830. EPEIRA AURELIA WALCK., Faune Franç., Arachn., p. 239.  
 184.. " WEBBII LUC., in WEBB et BERTH., H. N. d. Iles Canaries, Entom., p. 38, Pl. VI, fig. 5.  
 1867. NEPHILA AURELIA BLACKW., Notes on Spid., cet., in Ann. and Mag. of Nat. Hist., 3 Ser., XX, p. 210 (10).

in Carniola. Palpi longi. Thorax subrotundatus albo villo pubescens. Abdomen albo-luteum, fasciis 10 lineisque tribus transversis nigris."

*Ar. Linnæi* SCOP. is, as is known, = *Epeira diademata* (CLERCK). By "fasciæ" SCOPOLI evidently means the bands which reach down to the sides of the abdomen, by "lineæ" the shorter bands lying between these, and which in specimens with 13 separate bands are really 3 in number.

1) General Features of Chusan etc., in Ann. of Nat. Hist., IX (1842), p. 492.

SAVIGNY and AUDOUIN had already assumed that their *Arg. aurelia* was identical with FORSKÅL's *Ar. trifasciata*; also WALCKENAEER includes *Ar. trifasciata* FORSK. among the synonyms of *Ep. aurelia*, and there would therefore seem to be reason to resume the name *trifasciata*. Although I feel convinced that *Ar. fasciata* FABR. belongs to "*Arg. aurelia*" and not to *Arg. Bruennichii* (SCOP.) or *Ar. fasciata* OLIV., I still think that FORSKÅL's appellation ought to be preferred to that contemporaneously given by FABRICIUS, because FORSKÅL has not only given a better description of the species than FABRICIUS, but has also accompanied his description with a figure; and it would moreover be confusing to apply to this spider a specific name, under which *Arg. Bruennichii* has so long and so universally been known. — *Arg. trifasciata* has by BLACKWALL, as *Arg. Bruennichii* by C. KOCH, been aggregated to *Nephila* LEACH, but it certainly no more belongs to that genus than does *A. Bruennichii*.

*Ep. (Argyopes) trifasciata* DOLESCH.<sup>1)</sup> 1857 is a totally different species, although also belonging to the genus *Argiope*. For this handsome spider I propose the name *A. Doleschallii*.

(Pag. 497.) *Argyopes sericea*.

***Argiope lobata* (PALL.) 1772.**

- Syn.*: 1772. ARANEA LOBATA PALL., Spicil. zool., I, fasc. 9, p. 46, Tab. III, figg. 14, 15.  
 1777. " " ID., Naturgesch. merkwürd. Thiere, I, 9te Samml., p. 71, Pl. III, figg. 14, 15.  
 1781. " " FABR., Spec. Insect., p. 536.  
 1789. " " GMELIN, LINN. Syst. Nat., Ed. 13, I, v, p. 2954.  
 1789. " ARGENTEA ID., ibid., p. 2959 (Cfr LEPECHIN, Tageb. d. Reise, I, p. 316, Tab. 16, fig. 2).  
 1789. " SERICEA OLIV., Encycl. Méth., IV, pp. 188, 189.  
 1806. EPEIRA SERICEA LATR., Gen. Crust. et Ins., I, p. 107.  
 1826. " MARGARITACEA RISSO, H. N. d. princip. prod. de l'Eur. mérid., V, p. 170.  
 1826. SEGESTRIA DENTATA ID., ibid., p. 161.  
 1825—7. ARGIOPE SERICEA SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 334, Arachn., Pl. II, fig. 6.  
 ?1825—7. " SPLENDIDA ID., ibid., p. 335, Pl. II, fig. 7.  
 1831. EPEIRA SERICEA HAHN, Die Arachn., I, p. 8, Tab. II, fig. 4.

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1) Bijdr. t. de Kenn. d. Arachn. v. d. Ind. Arch., in Natuurkund. Tijdschr. v. Nederl. Indië, XIII (3 Ser., III), p. 416; ID., Tweede Bijdr. etc., Tab. I, fig. 3.

1837. *EPEIRA LOBATA* KRYN., Arachnogr. Ross. dec. prima, in Bull. de la Soc. Imp. de Nat. de Moscou, Année 1837, p. 77.
1839. *ARGYOPES PRÆLAUTUS* C. KOCH, Die Arachn., V, p. 36, Tab. CLIV, fig. 359.
1841. *EPEIRA SERICEA* WALCK., H. N. d. Ins. Apt., II, p. 116.
1841. " *SPLENDIDA* ID., ibid., p. 117.
1841. " *DENTATA* ID., ibid., p. 118.
1841. *ARGYOPES SERICEA* EICHW., Fauna Caspio-cauc., in Nouv. Mém. de la Soc. Imp. de Nat. de Moscou, VII, p. 241, Tab. XXXVII, fig. 4.
1866. " " CAPELLO, Espec. nov. . . d'Arachn. d'Africa occid., in Journ. d. Sc. math., phys. e naturales I, p. 82, Est. II, figg. 1a—1f (salt. ad part.).
1868. *ARGIOPE LOBATA* THOR., Om Ar. lobata PALL., in Öfvers. af Vet.-Akad. Förhandl., XXIV (1867), p. 595.

In my paper above referred to <sup>1)</sup>, I have shown that *Ar. lobata* PALLAS is the same species as *Ar. sericea* OLIV., which in fact KRYNICKI, as well as EICHWALD, had before me taken for granted. The reason, why the identity of these two species was so long and so generally unobserved by most arachnologists, is, that PALLAS, when he first (from specimens preserved in the "Museum Academiæ Petropolitanae") described the species, supposed it to be identical with PETIVER's *Araneoiles Cap. fasciata lutescens* etc. <sup>2)</sup> from the *Cape of Good Hope* (vid. Spicil. Zool., loc. cit.), and that subsequently FABRICIUS, in his Ent. Syst. (II, p. 407) took occasion on the strength of this to state without reservation, that the Cape of Good Hope was the native land of the species. PALLAS had nevertheless already in 1777, in fasc. 9 of the German edition of the Spicil. Zool., translated and revised by himself under the title of "*Naturgeschichte merkwürdiger Thiere, 9:te Sammlung*", p. 72, corrected his mistake, and indicated *Southern Russia* (where also NORDMANN <sup>3)</sup>, in Crimea, met with "*Argyopes sericeus*") as the native country of *Aranea lobata*: he there says: "ich habe dieselbe in den mittäglichen, wärmern Gegenden an der *Wolga* und am oberen *Irtisch*, und zwar schon in Maymonat vollkommen ausgewachsen angetroffen": he further states, that it had been found by FALK in Zarizyn, and by LEPECHIN, "who has described

1) Translated into English under the title: *On Aranea lobata* (PALLAS), in Ann. and Mag. of Nat. Hist., 4 Ser., II, p. 186.

2) PETIVER, Gazophyl. Naturæ et Artis, I, Tab. XII, fig. 11; Catal. classicus et topicus, p. 3, No. 440.

3) Erstes Verzeichn. d. in Finn. u. Lappl. gefundenen Spinnen, Araneæ, in Bidrag t. Finlands Naturkännedom, Ethnogr. och Statist., VIII, p. 17.

and figured it in the 1:st Volume of his Russian Travels" <sup>1</sup>). LEPECHIN's spider here referred to, and to which GMELIN, loc. cit., gave the name of *Ar. argentea*, is in fact nothing more than a variety of the common *A. sericea* or *lobata*.

WALCKENAER thinks (vid. H. N. d. Ins. Apt., II, p. 117) curiously enough, that the real "*Ep. sericea*" does not belong to the Fauna of Europe; this is the more inexplicable, as OLIVIER, who first described this spider under the trivial name *sericea*, expressly states that he found it "fréquentement en Provence". On the other hand WALCKENAER takes up as a European species *E. dentata* (Risso), which only differs from "*E. sericea*" by a somewhat different marking, and is from Nice, i. e. almost the same locality (South of France) where OLIVIER found his "*Aranea sericea*". WALCKENAER appears to have been as little acquainted with "*E. dentata*" (his description of this form being merely an extract from Risso's) as with European specimens of "*E. sericea*". — The specimens of the species in question, which I have myself seen, and which I have partly collected in Italy, in the neighbourhood of Naples (where also COSTA <sup>2</sup>) met with "*Epeira sericea*"), partly received from Dr F. S. SÖDERLUND, who had captured them in the isle of Iviza, agree however perfectly with not only PALLAS' *A. lobata*, but also with the descriptions and figures that OLIVIER, LATREILLE, WALCKENAER and SAVIGNY have given of *A. (E.) sericea*. They have not the marking which distinguishes *E. dentata*, according to Risso's (and WALCKENAER's) descriptions of that form, which however is most assuredly but a variety of *E. sericea* or *lobata* <sup>3</sup>). To *E. dentata* WALCKENAER rightly refers LEPECHIN's above-mentioned *Aranea.... abdomine.... lobato* etc. (*A. argentea* GMEL.), which indeed is, as we have already seen, stated by PALLAS himself to be identical with his *A. lobata*; to the same species moreover belongs without doubt *Argyopes praelatus* C. KOCH from Turkey (neighbourhood of Balkan), as also WALCKENAER supposed. It seems to me probable that even *A. splendida* SAV. et AUD. (from Syria) is only a variety of *A. lobata*.

1) LEPECHIN, Tagebuch d. Reise etc., I, p. 316, Tab. 16, fig. 2: "*Aranea senoculata*, thorace depresso, abdomine exovato globoso, lobato, punctis in dorso 4 nigris".

2) O. G. COSTA, Cenni Zoologici, p. 16.

3) One of the specimens from Iviza has two dark transverse bands across the back of the abdomen.

DE BRITO CAPELLO has endeavoured loc. cit. to show, that *Argyopes Clarkii* BLACKW. 1865 <sup>1</sup>) and *A. caudatus* ID. 1865 <sup>2</sup>) are nothing more than individual variations of *A. lobata* (*sericea*). As regards *A. Clarkii*, which DE BRITO CAPELLO refers to his '*A. sericea*. Var. *A. Cabo-verdiana*' (to which he also refers *A. splendida* SAV. et AUD.), BLACKWALL'S description seems to me to indicate so many differences from *A. lobata*, that I cannot doubt the independence of *A. Clarkii*. The cephalothorax of this species is stated to be *dark brown*; the *legs* are of the same colour, and no mention is made of paler rings; the abdomen is stated to have, in addition to the lateral prominences, "a smaller and more pointed one on each side of its anterior extremity" etc.; the description of the vulva does not seem to me to suit that of *A. lobata*. In *A. lobata* ♀, as is known, the cephalothorax is yellowish, with two dark longitudinal bands, and with a dark transverse patch immediately before the petiolum; the legs are brownish yellow, thickly annulated with black or brown; the abdomen has no pointed protuberances near its anterior extremity. Of the form of the vulva we shall speak hereafter. As to *Arg. caudata* [-us] BLACKW., which DE BRITO CAPELLO classes under '*A. sericea*. Var. *B. Zairiensis*', that species appears to me indeed very closely allied to *A. lobata*, much more so than *A. Clarkii*, but it is nevertheless probably an independent species: it has five dark transversal bands on the abdomen, the legs are "of a dark brown colour, the inferior surface of the coxæ and of the femora, especially at their base, being strongly tinged with dull yellow": the vulva has "a long, pale, reddish brown process in connexion with its anterior margin, that is directed backwards" etc. — On the other hand DE BRITO CAPELLO is quite right when he says that a short, transversely annulated caudal process is often found in *A. sericea* ♂: in some of my specimens the abdomen terminates in a conical protuberance, which is often very distinctly wrinkled transversely, especially on the upper side; in others this protuberance is, as it were, drawn in, so that the abdomen in the midst of its posterior extremity is truncated or even slightly emarginated; but even in such individuals a few very short, close, transverse wrinkles or lines, diminishing in length the more backward they are situated, are perceptible at the hindmost extremity of the middle

1) Descr. of.... spid. captured in the Cape de Verde Islands, in Ann. and Mag. of Nat. Hist., 3 Ser., XVI, p. 98 (19).

2) Descr. of.... Aran. from the East of Central Africa, *ibid.*, p. 347 (12).

line of the abdomen, above, marking the position of the retracted process.

The vulva in *A. lobata*, viewed directly from below, appears to be a large, deep, at the sides much rounded, for the most part black, double-fovea, the anterior, in front light-brown border of which is drawn out into an oblong, flattened, almost tongue-like, in the middle slightly broader, light-brown process curved and directed backwards, the breadth of which is about  $\frac{1}{3}$  of that of the vulva, and which with its apex reaches to the hinder edge of the latter: this process is however not free, but united with the bottom of the vulva by a perpendicular, thin lamina, which divides the whole into two large, deep, rounded, posteriorly open foveæ, one on each side of this septum. The posterior margin of the vulva exhibits in the midst a more pale-coloured protuberance, bounded by two depressions. The male is very unlike the female, many times smaller, its cephalothorax only about  $2\frac{1}{2}$  millim. long; the dark rings on the legs are indistinct, the abdomen elongated and narrow, with the sides straight, not at all festooned; the cephalothorax is without the transverse dark patch at the hinder extremity. The tibial joint of the palpus is extremely short and on the inner side drawn out into a rather short lobe, which is almost triangular, and blunt at the apex; the lamina (which is turned inwards) is at the very base on the outer side produced into a blunt, outward-directed, downward curved, stout, dark process; the bulbus is very large and complicated, and has on the under and hinder side an upward curved spine, which is long, tapering to a fine point, very thick at the base, and there armed with a tooth pointing downwards: the point of this spine rises behind the outward-folded border of a very large, upward and somewhat outward directed, almost mussle-shaped appendage on the outer side of the bulbus, near its base: from a protuberance on the under and outer side of the base of the bulbus, which protuberance is dentated on its upper margin, proceeds another finer and shorter spine or coarse bristle, the point of which is directed towards the inner side of the above-mentioned large process.

(Pag. 509.) *Arctosa singoriensis*.

***Trochosa singoriensis* (LAXM.) 1770.**

*Syn.*: 1770. ARANEA SINGORIENSIS LAXM., Nov. Ins. spec., in Nov. Comment. Acad. Scient. Petrop., XIV, 1, p. 602, Tab. XXIV, fig. 12.

1771. *ARANEA TARANTULA* PALL., Reise durch verschied. Prov. d. Russ. Reichs, I, p. 476.
1806. *LYCOSA TARENTULA* Russiæ australis LATR., Gen. Crust. et Ins., I, p. 119.
1822. " *TARANTULA* HAHN, Monogr. Aran., 3, Tab. II.
1831. " *LATREILLII* ID., Die Arachn., I, p. 98, Tab. XXIV, fig. 74.
1837. " *ROSSICA* KRYN., Arachnogr. Ross. dec. prima, p. 77.
1839. " *LATREILLII* C. KOCH, Die Arachn., V, p. 99, Tab. CLXXI, fig. 406.
1841. " *TARENTULOÏDES SINGORIENSIS* WALCK., H. N. d. Ins. Apt., I, p. 287.
1841. " *SONGARENSIS* EICHW., Fauna Caspio-cauc., p. 241.
1850. *ARCTOSA LATREILLII* C. KOCH, Uebers. d. Arachn.-Syst., 5, p. 32.
1857. *LYCOSA SINGORIENSIS* KOLENATI, Meletem. Entom. VII. Einige Arachn. d. Kaukas. Länd., in Bull. de la Soc. Imp. d. Nat. de Moscou, XXX, p. 439.

The above synonyms probably all refer to the same species, LAXMANN's *Ar. singoriensis*. KRYNICKI also cites, out of a work to me unknown, "*Lycosa rossica* FISCH., Oryctogr., Pl. VI". I have a full-grown female from Bukowina, the cephalothorax of which is 12 millim. long, the whole body 24 millim., and which certainly belongs to this species, although HAHN's and C. KOCH's descriptions do not in every respect suit it. The cephalothorax is blackish brown with somewhat paler borders and radiating black streaks on both sides: the abdomen seems to have been thickly covered above with hair of a rusty brown colour, which in this specimen is a good deal rubbed off, and in front exhibits some small whitish spots. Beneath it is black to a considerable height up the sides; the sternum and mandibles are black, the labium and maxillæ also black, but brownish yellow at the apex; the coxæ and trochanteres are on the under side brownish black. The thighs are above and on the sides brown, thickly speckled with black; the *whole* of their under side is of a uniform brownish yellow colour; the brown patellæ are at the sides speckled with black, and black beneath; the tibiæ are on the under side of a pale brownish yellow, with a broad black ring at the apex, and of a darker brownish yellow above; the apical ring is continued over the upper side of the tibia also, but encloses there near its extremity a large brownish yellow spot: a couple of small black spots are found nearer the base on the upper side. The following joints are darker, the tarsi almost black; the metatarsi have three black rings, which are particularly distinct on the posterior legs. The vulva is a small, almost T-shaped area: an elevated

middle costa, triangularly dilated behind, divides itself in front into two outward-curving branches, which in front bound two large rounded protuberances situated one on each side of the costa.

(Pag. 510.) *Tarentula Apuliæ*.

***Tarentula fascii-ventris* (DUF.) 1835.**

- Syn.*: 1758. ARANEA TARANTULA LINN., Syst. Nat., Ed. 10, I, p. 622 (*salt. ad part.*).
1790. " " ROSSI, Fauna Etr., II, p. 132.
1805. LYCOSA " WALCK., Tabl. d. Aran., p. 11.
1806. " TARENTULA LATR., Gen. Crust. et Ins., I, p. 119.
1835. " FASCI-VENTRIS DUF., Observ. sur la Tarentule, in Ann. d. Sc. Nat., 2 Sér., Zool., III, p. 101.
1837. " TARENTULA APULIÆ WALCK., H. N. d. Ins. Apt., I, p. 281.
1837. " " GUÉR., Iconogr. du Règne Anim., Arachn., p. 7, Pl. 1, fig. 6.
1839. " TARANTULA C. KOCH, Die Arachn., V, p. 112, Tab. CLXXIII, fig. 413.
1850. " (TARANTULA) APULIÆ ID., Uebers. d. Arachn.-Syst., 5, p. 33.
1865. " TARANTULA BERGSØE, Iagttag. om den Ital. Tarantel, *cet.*, in Nat.-hist. Tidskr., 3 Række, III, p. 243.
1870. TARENTULA APULIÆ THOR., On Eur. Spid., p. 191.
1871. " " SIM., Aran. nouv. ou peu connus, *cet.*, in Mém. de la Soc. roy. d. Sc. de Liège, 1870, p. 80.

In BERGSØE's above cited excellent work on the Italian Tarantula and the Tarantism, is contained, not only the most complete description hitherto given of *T. fascii-ventris*, as well in its full-grown condition as under the different stages of its developement, but also an accurate investigation of its synonyms from the earliest period to the present time, important information relative to its habits and geographical distribution, etc. — With LATREILLE and BERGSØE I aggregate without reservation LINNÆUS' *Ar. tarantula* to this species; for in the 10:th Edit. of the Syst. Nat. — the first in which trivial names are employed — LINNÆUS gives the name *Ar. tarantula* to "the spider which is called Tarantula", without giving any diagnosis or description of the species. That he has among his citations taken up one ("BRADL. natur. t. 24, f. 10"), which belongs to *T. narbonensis* (*hispanica*), only shows that he supposed the Spanish Tarantula to belong to the same species as the Apulian. The diagnosis "subtus atra, pedibus atro fasciatis", inserted in the 12:th Edition, and a part of the description there given, may indeed seem better to suit *T. nar-*



*bonensis* or some other species with the belly of a uniform black colour; but what LINNÆUS also in this edition says about the effects of the bite of his *Ar. tarantula* and of its haunts, shows that he had principally the Apulian Tarantula in view. — That he had himself, at the time of publishing the 10:th edition of Syst. Nat., seen any specimen of his *Ar. tarantula*, is hardly probable, as he has not there given any description of it. He himself expresses the suspicion, that several species may have been confounded under the "Tarantula" of the older authors (Syst. Nat., Ed. 12, I, II, p. 1035).

The vulva is formed of a tolerably large, somewhat transverse, blackish brown area, rounded off at the sides and drawn out in front into a blunt point, which area along the middle exhibits three shallow furrows, almost forming a narrow W, of which the middle one is longest and broadest: these furrows bound two slight, almost lanceolate elevations, the apices of which are directed backwards. The breadth of the whole area is as great as that of the tibiæ of the first pair. The under side of the thighs has in the middle a broad, transverse, pure-black spot, and is also black at the apex; moreover it presents a small, more or less distinct black spot close to the base.

Though WALCKENAE in his Tabl. d. Aran. has not given any description of his *Lyc. tarantula*, it is nevertheless through his citations and other remarks sufficiently determined, to justify our placing it among the synonyms of *T. fascii-ventris*.

(Pag. 510.) *Tarentula narbonensis*.

***Tarentula narbonensis* (LATR.) 1806.**

- Syn.*: 1794. ARANEA TARANTULA DORTH., Observ. on the struct. and œcon. of some cur. spec. of Aran., in Transact. of the Linn. Soc., II, p. 88.
1806. LYCOSA TARENTULA NARBONENSIS LATR., Gen. Crust. et Ins., I, p. 119.
- 181.. " MELANOGASTER ID., in Nouv. Dict. d'Hist. Nat., 2<sup>e</sup> Éd., XVIII, p. 291 (sec. WALCK. et DUF.).
1825. " NARBONENSIS WALCK., Faune Franç., Arachn., p. 12, Pl. 1, figg. 1—4.
1835. " TARENTULA DUF., Observ. sur la Tarentule, in Ann. d. Sc. Nat., 2 Sér., Zool., III, p. 97, Pl. 5, fig. 1.
1836. " PRÆGRANDIS C. KOCH, Die Arachn., III, p. 22, Tab. LXXXI, fig. 180.
1837. " TARENTULA NARBONENSIS WALCK., H. N. d. Ins. Apt., I, p. 282; Atlas, Pl. 8, figg. 1D, 1E.
1837. " " HISPANICA ID., ibid., p. 283.

1839. *LYCOSA PRÆGRANDIS* C. KOCH, Die Arachn., V, p. 114, Tab. CLXXXIII, fig. 414.  
 1848. „ (TARANTULA) *NARBONNENSIS* ID., ibid., XIV, p. 145, Tab. CCCCXCIII, fig. 1375.  
 1850. „ „ *PRÆGRANDIS* ID., Uebers. d. Arachn.-Syst., 5, p. 33.  
 1850. „ „ *NARBONNENSIS* ID., ibid.  
 1870. *TARENTULA MELANOGASTER* THOR., On Eur. Spid., p. 192.

Although this spider is already in 1805 mentioned by WALCKENAER in his Tabl. d. Aran., p. 12, under the name of *Lyc. tar. narbonensis*, LATREILLE ought nevertheless to be considered as the authority for the name; for WALCKENAER in the work mentioned has not in any way characterized the species, which LATREILLE was the first to do in his Gen. Crust. et Ins., in the following words: "*Lyc. tar. narbonensis* WALCK. minor [quam *L. tarentula*], abdomine infra atro, postice læte croceo". That this is the species which DORTÈS meant loc. cit. by his "*Ar. tarantula*", which according to him is common at Montpellier, cannot be doubted, although he has given no description of it. *L. tar. hispanica* WALCK. is undoubtedly the same species as *L. narbonensis* or *melanogaster* LATR.; nor can I believe that the Greek *L. prægrandis* C. KOCH — which is probably identical with *L. narbonensis* BRULLÉ<sup>1</sup>), — is a different species from *T. narbonensis*. Respecting *L. (T.) hellenica* C. KOCH<sup>2</sup>) I dare not offer an opinion. — *L. melanogaster* HAHN<sup>3</sup>), which WALCKENAER takes up under both *L. tar. narbonensis* and *L. captans* (Ins. Apt., I, p. 306), is an entirely different and far smaller spider; it is identical with *T. fabrilis* (CLERCK): vid. sup., p. 310; conf. also C. KOCH, Die Arachn., XIV, p. 147, where KOCH, who had seen HAHN's type-specimen, says that it belongs to *Ar. fabrilis* CLERCK or *Lyc. fabrilis* SUND. (C. KOCH confounded *T. fabrilis* (CLERCK) with *T. inquilina* (ID.) under the name of *L. (T.) fabrilis*). — On *L. captans* WALCK., vid. sup., pp. 314, 316.

Of *T. narbonensis* (LATR.) I possess only two full-grown specimens, the one from Spain, kindly furnished to me by Mr SIMON under the name of *L. narbonensis* WALCK., the other from Oran (Algeria). In both specimens the thighs on the under side are of a uniform brownish grey or brownish yellow colour, with only a very small,

1) Explor. scient. de Morée, Zool., Anim. Artic., p. 54.

2) Die Arachn., III, p. 24, Tab. LXXXI, fig. 181; V, p. 104, Tab. CLXII, fig. 409.

3) Die Arachn., I, p. 102, Tab. XXVI, fig. 76.

scarcely noticeable black spot at the very base, and with the extreme edge of the apex black. In the Spanish specimen almost the whole belly is occupied by one large, black field, which stretches itself, by a narrower, short addition to its length, as far as the mamillæ (just as in WALCKENAER's figure of the female in H. N. d. Ins. Apt., loc. cit.). On the sides of the black field the belly is orange-yellow. In the African specimen the short continuation of the black field to the mamillæ is wanting, so that the black colour does not reach those organs: the belly is in this specimen similar to that in C. KOCH's figure of "*L. prægrandis*" in Die Arachn., V, fig. 414. (Neither, according to him, does the black field in his "*L. narbonensis*" extend as far as the mamillæ). DUFOUR describes and figures the colour of the belly in his specimens from Spain just such as it is in my specimen from Oran; according to him the thighs have on the under side a *large* black spot at the base, and a small similar spot at the apex, much as, according to C. KOCH's figure above-mentioned, it appears to be in "*L. prægrandis*". All this shows, that the colour both of the belly and of the under side of the thighs somewhat varies. The vulva is in *T. narbonensis* much smaller than in *T. fascii-ventris*, not broader than the diameter of a tarsus, reddish brown, with two narrow, longitudinal furrows, which are pointed in front and separated by a low, flat septum, the whole almost forming a narrow M; in one of my specimens (the Spanish) the septum is somewhat dilated and depressed in the posterior extremity, in the other it is of more uniform breadth.

(Pag. 509.) *Arctosa liguriensis*.

***Tarentula liguriensis* (WALCK.) 1837.**

- Syn.: 1837. LYCOSA TARENTULOIDES LIGURIENSIS WALCK., Ins. Apt., I, p. 288.  
 ?1845. " BIMPRESSA LUC., Explor. de l'Algér., Anim. Artic., I, p. 107, Pl. 2, fig. 6.  
 1871. TARENTULA LIGURIENSIS SIM., Aran. nouv. ou peu connus du midi de l'Eur., in Mém. de la Soc. roy. d. Sc. de Liège, 1870, p. 83.

This spider is more nearly allied to e. g. *T. fabrilis* and *T. radiata* (*famelica*) than to the genuine Tarantulæ (*T. fascii-ventris*, *T. narbonensis*, *T. tarentulina* etc.), from which it differs in having the anterior row of eyes but *slightly* curved forwards, the pale lateral bands of the cephalothorax *not* deeply and undulatingly toothed

on the inner margin, etc. It is about as large as *T. tarentulina* (the cephalothorax only about 10 millim. long and  $7\frac{1}{2}$  millim. broad), but of a paler colour, reddish brown; the legs are pale brown, without darker spots on the upper side, except perhaps at the apex of the posterior metatarsi. The 1:st pair of legs are 29 millim. long, or near 3 times as long as the cephalothorax; the 4:th pair are 31, their patella + tibia  $10\frac{2}{3}$ , the tibia alone 7 millim. The mandibles are  $4\frac{1}{2}$  millim., fully 1 millim. shorter than the metatarsi of the 1:st pair, a little longer than the tarsi of the 4:th pair. The sides of the abdomen and the pulmonal shields are brownish grey, the rest of the under side of the body is black, as are also the coxæ for the most part beneath. The vulva consists of a tolerably large, oblong, depressed area or shallow fovea, which is about as broad as the metatarsi, rounded in front, with almost parallel sides; it is divided into two parts by a narrow longitudinal septum, which at its hinder extremity is rapidly dilated, there forming a transversal costa, which constitutes the back limit of the fovea, and exhibits three small depressions above; in front, where the fovea is deeper, that septum also becomes gradually broader. — For a ♀ *ad.* of this species from the south of France I am indebted to the kindness of Mr SIMON.

SIMON takes up loc. cit. under this species *Lyc. (Tar.) isabellina* C. KOCH<sup>1)</sup>, which however seems rather to belong to *T. radiata* (LATR.) or *T. famelica* (C. KOCH), SIM. Vid. sup., p. 316.

I have received of Dr SÖDERLUND a *Tarentula* from the island of Mallorca, which is very nearly allied to *T. liguriensis*, but differs by the form of the vulva and the somewhat shorter legs etc.; I call this species *T. balearica*<sup>2)</sup>.

1) Die Arachn., XIV, p. 158, Tab. CCCCXCVI, fig. 1384.

2) *Tarentula balearica* N. pallide fusco- vel cinereo-testacea, cephalothorace (in ♀ æque longo ac patella + tibia 4:ti paris) fusco, vitta media longitudinali, in parte cephalica dilatata, vitta utrinque marginali sub-geminata, striisque radiantibus utrinque quattuor, pallidis; tibiis saltem posticis fascia transversa apicali aliaque basali nigris; abdomine supra macula antica obscuriore sub-hastata plus minus distincta; vulva minuta, ex area fusca rotundato-triangula, ad longitudinem bis impressa formata; bulbo genitali maris in medio versus latus exterius dente sub-triangulo, compresso, deorsum et intus directo armato. — ♂ ♀ *ad.* Long. ♂ c:a 16, ♀ c:a 23 millim.

*Femina.* — *Cephalothorax*  $9\frac{1}{3}$  millim. longus,  $7\frac{1}{4}$  latus, obscure fuscus, vittis tribus latis longitudinalibus striisque utrinque radiantibus quattuor, cinereo-testaceis; vitta media in parte cephalica satis dilatata, inter oculos rursus angustata, vittis lateralibus serie macularum minutarum fusciorum versus marginem

(Pag. 511.) *Tarentula tarentulina*.

*Tarentula tarentulina* (SAV. et AUD.) 1825—27.

Syn.: 1825—7. LYCOSA TARENTULINA SAV. et AUD., Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 363, Arachn., Pl. IV, fig. 2.

1837. " " WALCK., H. N. d. Ins. Apt., I, p. 304.

With *L. tarantulina* SAV. et AUD. most assuredly no one of the species cited by WALCKENAER under that species is synonymous: this

exteriorem sub-geminatis, in margine interiore paullo inæqualibus. *Sternum* et *coxae* subter pallide fuliginæ sive lurido-nigræ, illud maculis sub-testaceis. *Oculorum* series antica paullo tantum procurva. *Mandibulæ* 4 millim. longæ, quam metatarsi 1:mi paris parum plus  $\frac{1}{2}$  millim. breviores, tarsos 4:ti paris longitudine saltem æquantes, nigro-fuscæ, in dorso fulvo-pilosæ, ad apicem intus nigro-pilosæ. *Maxillæ* fusco-testaceæ, *labium* nigricans, apice testaceo-fuscum. *Palpi* pallide fusco-testacei, parte tarsali apice infuscata. *Pedes* 1:mi paris cephalothorace c:a  $2\frac{4}{5}$  longiores (26 millim.; 2:di paris  $23\frac{1}{2}$ , 3:tii  $22\frac{1}{2}$ , 4:ti 31 millim.); patella + tibia 4:ti paris longitudinem cephalothoracis æquant, non superant. Tibia 4:ti paris 6 millim., ideoque latitudine cephalothoracis multo brevior. Color pedum pallide fusco-testaceus; supra vix evidenter fusco-maculati sunt; femora in lateribus minus expresse fusco-sub-maculata, 4 anteriora in latere anteriore versus basin sub-infuscata; tibiæ posteriores subter fasciam transversam apicalem nigram aliamque basalem angustiore ostendunt, in pedibus 4:ti paris præsertim bene expressas; tibiæ anteriores talem fasciam angustam vel in maculas divulsam ad basin habent, vix vero ad apicem. Tarsi metatarsique subter scopulis nigricantibus vestiti. *Abdomen* fere 13 millim. longum, supra et in lateribus cinereo- vel pallide fusco-testaceum, maculis duabus nigris supra petiolum,  $\Lambda$  crassum abruptum formatibus; in dorso antice series duas ex maculis paucis minutis nigris formatas ostendit, quarum duæ posticæ longiores sunt paulloque divaricantes: area inter has series interjecta paullo infuscata fuisse videtur (et verisimiliter posteriora versus producta fuit, maculam sub-hastatam referens); præterea dorsum abdominis unicolor est, punctis tantum nigris sparsum (num ita semper?). Venter area magna, minus lata, nigra occupatur, a rima genitali et scutis pulmonalibus testaceo-fuscis usque ad *mamillas* fuscas pertinenti; locus inter scuta pulmonalia nigro-pilosus. *Vulva* ex area parva fusca, anteriora versus angustata constat, quæ sub-triangular est, angulis et lateribus tamen rotundatis, æque longa ac lata ad basin, tarsi diametrum longitudine vix æquanti; secundum medium sulcis duabus longitudinalibus alioque sulco vel impressione ad angulos posticos utrinque notata est.

*Mas.* — *Cephalothorax* et *mandibulæ* ad colorem ut in ♀ omnino; ille  $8\frac{1}{2}$  millim. longus et 7 millim. latus; hæ fere  $3\frac{1}{2}$  millim. longæ, quam metatarsi 1:mi paris pæne duplo breviores, longitudine tarsos 3:tii paris æquantes. *Sternum*, *maxillæ*, *labium*, *coxae* (etiam subter) pallide fusco-testaceæ. *Pedes* 1:mi paris  $30\frac{1}{2}$  millim. longæ, cephalothorace plus  $3\frac{1}{2}$  longiores; 4:ti paris 35, patella + tibia hujus paris  $10\frac{1}{2}$ , tibia paullo plus 7 millim., latitudine cephalothoracis paullo longior. *Palpi* et *pedes* pallide fusco-testacei; palporum pars tarsalis apice

spider has not, as far as I am aware, hitherto been found in Europe. I have in my possession a full-grown female *T. tarentulina* from Algiers, which I have received of Mr H. A. EUREN; it is considerably smaller than *T. narbonensis*, its cephalothorax being only 9 millim. The sternum, coxæ, maxillæ and labium are not pure black, but rather piceous, the thighs on the under side yellowish brown, paler towards the apex (of which the extreme edge is black), thickly covered with greyish white hair. The vulva also is different; it consists of a little reddish brown, almost triangularly egg-shaped area, with the apex directed backwards, which exhibits three longitudinal depressions, one shorter in the middle, in front, and one on each side of it, these latter converging backwards; the extremity of the area is extended backwards to the rima genitalis as a short reddish costa or protuberance broader behind. In other respects this species is very similar to *T. narbonensis*. See also what has been said above, p. 529, under *T. liguriensis*.

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sub-infuscata, mandibulis paullo brevior; pars tibialis duplo saltem longior quam lator. Bulbus sat parvus, parum complicatus; versus basin, ubi altior est, ad latus exterius incisuram sive impressionem magnam ostendit; ex hac impressione exit dens transversus, compressus, fuscus, deorsum et intus directus, fere in medio bulbi versus latus ejus exterius situs; apex hujus dentis parum ultra superficiem bulbi eminet. Femora, præsertim posteriora, maculis parvis obscuris minus distinctis supra et in lateribus notata sunt; tibiæ 4:ti paris semi-annulum sive fasciam transversam nigram satis latam subter in apice, aliamque angustiore ad basin habent; metatarsi ejusdem paris supra in apice anguste nigri sunt; subter tarsi et ad maximam partem metatatarsi quoque nigricantes. *Abdomen* 7½ millim. longum, pallide fusco-testaceum; supra petiolum maculas duas nigras ostendit, in dorso antice maculam sub-hastatam (ad formam ut in *T. fabrili* fere), et pone eam lineas paucas transversas angulatas, nigricantes, minus expressas habet; venter quoque sub-testaceus (num semper?), scutis pulmonalibus paullo obscurioribus, et ipsa apertura sexuali nigra; pone eam adsunt ordines duæ breves, postice paullo appropinquantes, punctorum nigricantium. *Mamillæ* nigro-fusæ.

In *junioribus* corpus subter pallidum totum; abdominis dorsum antice macula sub-hastata bene expressa nigricanti, ad formam ut in *T. fabrili*, notatum est, et vestigia quoque macularum majorum rotundatorum pallidiorum utrinque postice ostendit.

Unicum exemplum adultum utriusque sexus, cum junioribus paucis possideo, in insulis Balearibus (ad Palmam) a D:re F. SÖDERLUND capta donoque mihi data. — Formâ vulvæ et pedibus brevioribus (cephalothorace non brevior quam patella + tibia 4:ti paris) femina a *T. liguriensi* ♀, cui valde similis est, facile internoscitur. A *T. radiata* (vid. sup., p. 313) præterea magnitudine majore cet. distinguui potest.

*Lycosa affinis* LUC.<sup>1)</sup>, which LUCAS considers as a species different from *T. tarentulina*, and of which he says that he is unacquainted with the female, I should have supposed to be the male to *T. tarentulina*, if LUCAS had not both described and figured the two middle eyes as oval, which is by no means the case in *T. tarentulina*, at least not in the female.

(Pag. 513.) *Leimonia pallida*.

***Lycosa Wagleri* HAHN 1822.**

- Syn.*: 1822. LYCOSA WAGLERI HAHN, Monogr. Aran., 3, Tab. III, fig. b.  
 1825. " PALLIDA WALCK., Faune Franç., Arachn., p. 29.  
 1837. " ID., H. N. d. Ins. Apt., I, p. 334.  
 1848. " (LEIMONIA) WAGLERI C. KOCH, Die Arachn., XV, p. 19,  
 Tab. DIX, fig. 1427.

WALCKENAER in the passage referred to takes up under his *L. pallida*: "*L. littoralis* WALCK., Tabl. d. Aran., p. 13"; but about this *L. littoralis* we there learn nothing more than that it is "une nouvelle espèce des environs de Paris", and the name *littoralis* cannot accordingly have any pretensions to priority.

Of *L. Wagleri* I possess some specimens, which I collected at St. Moritz in Oberengaddin on the banks of the Inn; I have also a couple from Tirol, given to me by Dr L. KOCH. The vulva in this species is very characteristic: it consists of a large, narrowly egg-shaped or somewhat heart-like double-fovea, which behind, where it is narrowest, rapidly dilates again into two large rounded foveæ, one on each side: the whole is divided into two by a long and narrow longitudinal septum, which at the anterior extremity, before it unites with the anterior margin of the double fovea, is somewhat dilated; at the posterior extremity, between the two large foveæ, it is sharply dilated in a triangular form. The bulbus has on the under side near the middle a rather large, stout and blunt, black spine, which at the base is directed forward, but afterwards curved outwards and backwards into a semicircle or sickle's form, and immediately at the base of this spine, on the outer side, a strong, downward-turned, somewhat blunt tooth may be perceived.

1) Explor. de l'Algérie, Anim. Artic., I, p. 106, Pl. 2, fig. 5.

(Pag. 516.) *Zora spinimana*.

***Zora ocreata* C. KOCH 1841.**

- Syn.*: 1841. DOLOMEDES OCREATUS C. KOCH, in WAGNER, Reisen in d. Regentsch. Algier, III, p. 212, Tab. X.  
 1841. „ DUFOURII WALCK., H. N. d. Ins. Apt., II, p. 455.  
 1845. LYCOSOIDES ALGIRICA LUC., Explor. de l'Algér., Anim. Artic., I, p. 122, Pl. 2, fig. 10.  
 1848. ZORA OCREATA C. KOCH, Die Arachn., XIV, p. 105, Tab. CCCCLXXXI, fig. 1345.

C. KOCH in Die Arachn., loc. cit., mentions "gebogenen" spines on the legs of DUFOUR's *Dol. spinimanus*<sup>1)</sup>, and accordingly does not accept the identity of that species, or *D. Dufourii* WALCK. 1837<sup>2)</sup>, with his *Zora ocreata* or *D. Dufourii* WALCK. 1841. This however arises from a misunderstanding, for neither DUFOUR nor WALCKENAER says that the spines are *curved*, but *appressed* ("tout à fait couchés"), when the animal does not spontaneously erect them. Nevertheless it appears to me very uncertain whether *D. spinimanus* DUF. (*D. Dufourii* WALCK. 1837) be the same species as *Z. ocreata* C. KOCH, for in *D. spinimanus* the 1:st pair of legs is said to be the longest, then the 2:nd pair, and "afterwards the hind legs". The colour of the abdomen appears also to differ: it is in fact described as "blond, picotté de noir et marqué de deux taches dorsales, l'une vers son tiers antérieur, l'autre à son extrémité". There would therefore seem to be reason to retain, for the present at least, the specific name *ocreata* C. KOCH for the spider which WALCKENAER in Vol. II of his H. N. d. Ins. Apt. has described under the name of *D. Dufourii*.

In *Z. ocreata*, both ♂ and ♀, the 1:st and 4:th pairs of legs are so nearly equal in length, that I dare not decide which is the longer. In a ♀ (from Algeria), whose cephalothorax is near 6 millim. long, these pairs are about 19 millim., the 2:nd pair 17 and the 3:rd pair 13½; in a ♂, whose cephalothorax hardly exceeds 4 millim., the 1:st and 4:th pairs are 18½ millim. long.

Respecting *Zora spinimana* (SUND.), C. KOCH, *cet.*, *vid. sup.*, p. 168.

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1) DUF., Descr. de cinq Arachn. nouv., in Ann. gén. d. Sc. Phys., V, p. 204, Pl. LXXVI, fig. 3.

2) H. N. d. Ins. Apt., I, p. 358.



(Pag. 522.) *Xystica robusta*.

*Xysticus fucatus* (WALCK.) 1802.

- Syn.*: 1802. ARANEA FUCATA WALCK., Faune Par., II, p. 232.  
 1805. THOMISUS FUCATUS ID., Tabl. d. Aran., p. 32.  
 1830. " " ID., Faune Franç., Arachn., p. 72.  
 ?1831. " ROBUSTUS HAHN, Die Arachn., I, p. 50, Tab. XIII, figg.  
 38, A-C.  
 ?1833. " OBSCURUS ID., Monogr. Aran., 7, Tab. IV, fig. c.  
 ?1836. " ROBUSTUS ID., ibid., 8, Tab. III, fig. e.  
 1837. " FUCCATUS WALCK., H. N. d. Ins. Apt., I, p. 505.  
 1869. XYSTICUS " CANESTR. et PAV., Aran. Ital. (p. 92 ).  
 1872. " FUCATUS THOR., Rem. on Syn., pp. 244, 251.

Whether HAHN's *Thom. robustus* and *Th. obscurus* belong to this species, or to *Th. bufo* DUF., or lastly to some third, to me unknown species, as SIMON<sup>2)</sup> seems to suppose, is very uncertain. C. KOCH<sup>3)</sup> looks upon *Th. robustus* HAHN as probably the female to *X. morio* or *fuscus* C. KOCH, concerning which see more p. 538. In a female from Italy, sent me by CANESTRINI under the name of *X. fuscatus* (WALCK.), which appellation is probably correct, the cephalothorax is  $3\frac{1}{2}$ , the 1st and 2nd pairs of legs each  $9\frac{1}{2}$  millim. long, that is, only about  $2\frac{3}{4}$  times as long as the cephalothorax. The tibiae of the 1st pair have on the under side two rows of short, strong spines, with 5 spines in the one and 4 in the other row; the legs are particularly stout, the tarsi, especially those of the anterior legs, very thick, scarcely more than 3 times as long as their greatest breadth. The vulva consists of a little pale fovea well defined by elevated margins in front and at the sides. The cephalothorax is garnished with forward-directed, short, blunt (but not club-shaped) bristles. The area of the four centre eyes appears to me of precisely equal breadth before and behind. The colour is dark greyish brown, with blackish mottling; the cephalothorax has on its hinder slope a whitish, in front broad and slightly notched, pale spot. The sternum is greyish brown, thickly sprinkled with small, blackish spots and points. The legs have indistinct rings of a paler colour; the anterior patellæ are on the under side blackish. The back of the abdomen is sprinkled with blackish points and small spots, which

1) According to a specimen sent by Prof. CANESTRINI.

2) Aran. nouv. ou peu connus du midi de l'Eur., p. 50.

3) Die Arachn., IV, p. 62.

on both sides, behind, are larger and more transverse. — A ♀ *X. brevitarsis* SIM. <sup>1)</sup>, sent me by SIMON himself, is extremely like this *X. fucatus* CAN. et PAV.; what has been said about this last is also true of *X. brevitarsis*, except that *X. brevitarsis* is something larger (the cephalothorax  $4\frac{1}{2}$  and the 1:st and 2:nd pairs of legs 11 millim. long), with 6 pairs of spines on the under side of the tibiæ of the 1:st pair; moreover the area of the 4 centre eyes seems to me a hair's-breadth broader behind than before, and the bristles on the cephalothorax somewhat shorter and stouter: among those situated around and between the eyes, some are slightly thicker towards the apex, which is not the case in CANESTRINI's species. Not only the patellæ of the anterior legs, but also their tibiæ and metatarsi are black on the under side. The vulva appears to have exactly the same form as in *X. fucatus*. Whether *X. brevitarsis* be or be not the same species, which I, with CANESTRINI and PAVESI, have here called *X. fucatus*, must be left to future researches to decide. — It seems that *X. fucatus* is met with also in Sweden: vid. sup., p. 251.

(Pag. 522.) *Xystica bufo*.

***Xysticus bufo* (DUF.) 1820.**

*Syn.*: 1820. THOMISUS BUFO DUF., Descr. de cinq. Arachn. nouv., in Ann. gén. d. Sc. Phys., V, p. 206, Pl. LXXVI, fig. 4.

1837. " " WALCK., H. N. d. Ins. Apt., I, p. 506.

In one full-grown female of this species (from Spain), whose cephalothorax is 4 millim. long, the length of the 1:st pair of legs is 12 millim.; in another, where the cephalothorax is  $3\frac{1}{2}$  millim., those legs are  $11\frac{1}{2}$  millim. long; so that the first pair is about 3 times as long as the cephalothorax. The tolerably short, scattered bristles, with which the cephalothorax is furnished, are sharp, not blunt. The tarsi are of the usual form, many times as long as they are broad. The tibiæ of the 1:st pair have on the under side two rows of spines, 5 in the one, 3 in the other row. The vulva is a comparatively pretty large area, enclosed by an elevated margin, and divided by two narrow longitudinal furrows into three low ridges, of which the centre one is the longest and broadest. The legs are paler on the under than on the upper side, the metatarsi and tarsi

1) SIMON, Aran. nouv. ou peu connus du midi de l'Eur., in Mém. de la Soc. Roy. d. Sc. de Liège, 1870, pp. 49, 50.

paler towards the base than the legs are elsewhere. The colour both of the legs and body varies considerably, from blackish brown to yellowish or greyish brown; the abdomen often has a few fine white or greyish transversal lines on the hinder part of the back. The posterior legs have usually fine, longitudinal, white lines along the patellæ and tibiæ and occasionally also along the metatarsi.

The male of this species is considerably smaller than the female and has brighter colours. The cephalothorax is black with a fine white edge, and crossed by a row of white spots between the eyes. The oral apparatus is blackish brown, the palpi mottled with black and brown, the lamina black, brownish at the apex. The legs are for the most part black above, and blackish brown on the under side; the metatarsi and tarsi of the anterior legs are broadly whitish towards the base, the tarsi of the 4:th pair almost entirely greyish yellow, the posterior pairs, especially on the patellæ and tibiæ, white-lined above. The abdomen above is black with 5 or 6 pure white transverse lines on the posterior half, the first of which is broken in the middle. The anterior margin is occupied by an irregular broad transverse band of whitish colour. Moreover the abdomen exhibits a couple of small white spots behind that band, and several such spots on the sides. The tibial joint of the palpus is on its outer side drawn out in the form of a broad, forward- and outward-pointing lamina, which is lengthened by two divergent sharp processes, or spines, one in the upper and one in the lower corner: the upper one is slightly curved inward, directed forwards and a little outwards and upwards, the lower is directed downwards, outwards and forward; on the under side this joint also has a long, stout, curved, first downward- and afterwards forward-directed, blunt process, which is almost uniform in thickness, but slightly dilated towards the apex. The under side of the bulbus has no projecting processes.

Of *X. bufo* I found some females and a male at Nice, and Mr SIMON has kindly sent me a female from Spain.

(Pag. 523.) *Xystica lateralis*.

***Xysticus lateralis* (HAHN) 1831.**

Syn.: 1831. THOMISUS LATERALIS HAHN, Die Arachn., I, p. 40, Tab. X, fig. 31.  
1831. " " ID., Monogr. Aran., 6, Tab. II, fig. B.



palpi does not seem quite to suit the specimen that I have seen. — As C. KOCH by *X. fuscus* undoubtedly meant the same spider which he afterwards called *X. morio*, the species ought to bear the name of *X. fuscus* C. KOCH 1837. — *Thomisus fuscus* GRUBE <sup>1)</sup> 1861 is quite a different species.

(Pag. 526.) *Thomisa delicatula*.

***Dica tricuspidata* (FABR.) 1775.**

- Syn.*: 1775. ARANEA TRICUSPIDATA FABR., Ent. Syst., p. 433.  
 1802. " DIANA WALCK., Faune Par., II, p. 232 (= ♀).  
 1802. " DELICATULA ID., ibid. (= ♂).  
 1805. THOMISUS DIANA ID., Tabl. d. Aran., p. 30.  
 1805. " TRICUSPIDATUS ID., ibid., p. 32.  
 1805. " DELICATULUS ID., ibid.  
 182.. " DIANA HAHN, Monogr. Aran., 2, Tab. III, fig. A.  
 182.. " HERMANI ID., ibid, fig. B.  
 1831. " DIANA ID., Die Arachn., I, p. 31, Tab. IX, fig. 26.  
 1870. DICA TRICUSPIDATA THOR., On Eur. Spid., p. 184.

On *Ar. tricuspidata* FABR., see WALCK., H. N. d. Ins. Apt., I, p. 531.

(Pag. 526.) *Pachyptyla villosa*.

***Misumena hirsuta* (WALCK.) 1825.**

- Syn.*: 1825. THOMISUS HIRSUTUS WALCK., Faune Franç., Arachn., p. 85.

***Misumena villosa* (WALCK.) 1837.**

- Syn.*: 1837. THOMISUS VILLOSUS WALCK., H. N. d. Ins. Apt., I, p. 535.  
 1838. " HIRTUS C. KOCH, Die Arachn., IV, p. 42, Tab. CXX, figg. 275, 276.  
 ?184.. " VILLOSUS LUC., Explor. de l'Algér., Anim. Artic., p. 192, Pl. X, fig. 8.

Those who wish for an example of how WALCKENAER, in his H. N. d. Ins. Apt., often proceeded in his quotations from other writers, may find a most instructive one in his account of his "Thomise hérissé, *Thom. villosus*". His first citations (op. cit., I, p. 536)

1) Beschreib. neuer... im Amurlande u. Ostsibirien gesamm. Aran., in Bull. de l'Acad. d. Sc. de St.-Pétersbourg, IV, p. 177; Mélanges biolog. tirés du Bull., IV, I, p. 17.

are: "WALCK., Aranéides de France, p. 85, No. 20", and "LATR., Nouv. Dict. d'Hist. Nat., XXXIV, p. 41". When we turn to the passage cited in "Aranéides de France", i. e. Faune Franç., Arachn., we do not find (Thom. hérissé) *Thom. villosus*, but (Th. hérissé) *Th. hirsutus*, and a reference to "LATR., Nouv. Dict. d'Hist. Nat., Tom. XXXIV, p. 41", just as under the article *Th. villosus* in H. N. d. Ins. Apt. But in this latter work (p. 511) we find also "LATR., Nouv. Dict. d'Hist. Nat., Tom. XXXIV, p. 41", cited under *Thom. claveatus* WALCK.; and that even here it is LATREILLE's "Thom. hérissé", that is meant, is evident from the reference to the Descr. de l'Égypte, where the species, to which WALCKENAER refers, is called "*Thom. hirtus*, Thom. hérissé? LATR." — not *Thom. hirsutus*. Having never had access to the 2nd Edition of the Nouv. Dict. d'Hist. Nat., in which LATREILLE has described his "Thom. hérissé", I am not able to decide to what species this spider belongs, and do not even know, whether LATREILLE used scientific (Latin) names for this and sundry other species, which he has there described<sup>1</sup>); for WALCKENAER's (and his copyists') citations leave us in ignorance even of this. With *Th. claveatus* WALCK., LATREILLE's spider is certainly not identical, for in his Cours d'Entom., p. 534 (1831) LATREILLE says: "Celle qu'il [WALCKENAER] nomme après moi *hérissé* se rapproche beaucoup d'une figure de M. SAVIGNY dans l'ouvrage sur l'Égypte (*Arachn.*, Pl. VI, fig. 10)". The figure to which LATREILLE here refers, represents *Thom. Buffonii* SAV. et AUD.<sup>2</sup>), which, if not identical with *Th. villosus* WALCK., is most certainly closely allied to this spider. (According to CAMBRIDGE<sup>3</sup>), *Th. Buffonii* is a separate species from *Th. hirtus* C. KOCH). But I do not think, that LATREILLE's "Thom. hérissé" is the same species as *Th. villosus*, partly because the description, which WALCKENAER in the Faune Franç. has given of *Thomisus hirsutus*<sup>4</sup>),

1) In some cases he has certainly done so, as for example not only WALCKENAER but also DUFOUR cite from the same work "*Mygale carminans* LATR." Vid. sup., p. 495, *Syn.*

2) Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 396, Arachn., Pl. VI, fig. 10.

3) Gen. list of the Spid. of Palestine and Syria, in Proceed. of the Zool. Soc., 1872, p. 308.

4) "Thomise hérissé, *Thomisus hirsutus*. (Long. 2 lig. 1/2). Corps d'un vert pâle, hérissé de poils élevés, grisâtres. Abdomen arrondi; yeux petits, pâles, les deux latéraux postérieurs pédiculés. Pattes avec des poils, qui sont portés sur des tubercules spiniformes, particulièrement sur les deux paires antérieures. Les tubercules du côté interne du second article des deux premières jambes sont plus longs, et forment une série de dents; tarses épineux. — Dans le midi de la France et aux environs de Nice." — WALCK., Faune Franç., Arachn., pp. 85, 86.

and which he probably borrowed from LATREILLE, differs greatly from his description of *Th. villosus*, partly because I happen to possess a specimen from the South of Europe of a species nearly related to *Th. villosus*, which the description of *Th. hirsutus* suits far better than that of *Th. villosus*. I have therefore distributed the synonyms of these two species as is seen above. — If LATREILLE in the 2:nd edition of *Nouv. Dict. d'Hist. Nat.* has given a Latin name, whether *hirtus* or *hirsutus*, to his "Thom. hérissé", it is clear that that name must take precedence of WALCKENAER'S.

In both *Misumena villosa* and *M. hirsuta* the body is covered with long coarse bristles and hairs; as the spines with which the legs are copiously supplied, much resemble the bristles in colour and length, they have been overlooked by WALCKENAER, as is clear from his description of *Th. villosus*. In both species the spines with which for example the under side of the anterior tibiæ and metatarsi is armed, are situated on conical protuberances, which are higher in proportion to the stoutness of the spines they bear, and are more developed in the anterior than in the posterior row of spines; they also appear to me to be somewhat stouter in *M. hirsuta* than in *M. villosa*. In the female of this last species the 1:st pair is  $3\frac{1}{2}$ —4 times as long as the cephalothorax; the back of the cephalothorax is straight, carinated, with very marked impressioes cephalicæ; the pars cephalica is narrow, not rounded at the sides, nor depressed across the middle, and has (as in the case also of the male) a very conspicuous, whitish, longitudinal middle band or line. The anterior lateral eyes are a trifle larger than the anterior centre eyes. The spines on the legs are tolerably fine, although in size and number pretty variable. In ♂ the bristles, hairs and spines on the legs are much longer than in ♀, and the spines particularly fine. The outer side of the tibial joint of the palpi is drawn out into an almost uniformly broad process or thick lamina directed forward and somewhat outward and slightly curved downward, which is almost double as long as it is broad, and considerably longer than the tibial joint itself; on the inner side, a little behind the upper angle of the truncated extremity, it carries a strong, somewhat pointed, straight, forward- and slightly outward-pointing spur; the lower angle of the extremity forms a projecting corner; beneath, near the outer side, the tibial joint carries an outward- and slightly forward-pointing, almost straight, pretty strong process, which is slightly depressed at the extreme apex, and there, on the inner side, dilated into or provided with a little process projecting at right angles.

In *M. hirsuta* ♀ the legs of the 1st pair are 3 times as long as the cephalothorax, which is brownish yellow, marbled with white; its back is not carinated; the pars cephalica is large and well defined, with slightly rounded sides, *strongly depressed across the middle*, and has above some longitudinal whitish stripes alternating with brownish yellow stripes. The ♂ of *M. hirsuta* is unknown to me. The anterior lateral eyes are not inconsiderably larger than the anterior centre eyes, and both this peculiarity and the strong spines on the under side of the tibiæ and metatarsi of the anterior legs mark this species as standing on the limit of transition to the genus *Xysticus*. As in *M. villosa*, the posterior centre eyes are of equal size with the posterior lateral eyes, and the area of the four centre eyes rectangular, or at least not narrower before than behind.

(Pag. 527.) *Synema rotundata*.

***Dica globosa* (FABR.) 1775.**

- Syn.*: 1775. ARANEA GLOBOSA FABR., Syst. Ent., p. 432.  
 1790. " PLANTIGERA ROSSI, Faun. Etr., II, p. 134.  
 1801. " IRREGULARIS PANZ., Faun. Ins. Germ., 74, 20.  
 1802. " ROTUNDATA WALCK., Faune Par., II, p. 231.  
 1805. THOMISUS ROTUNDATUS ID., Tabl. d. Aran., p. 30.  
 1806. " " ID., H. N. d. Aranéides, 2, 7.  
 1831. " " HAHN, Die Arachn., I, p. 34, Tab. IX, fig. 28.

(Pag. 527.) *Chersis gibbulus*.

***Palpimanus gibbulus* (DUF.) 1820.**

- Syn.*: 1820. PALPIMANUS GIBBULUS DUF., Descr. de six Arachn. nouv., in Ann. gén. d. Sc. phys., IV, p. 364, Pl. LXIX, fig. 5.  
 1836. PALPIMANUS HÆMATINUS C. KOCH, Die Arachn., III, p. 21, Tab. LXXX, figg. 178, 179.  
 1837. CHERSIS GIBULLUS WALCK., H. N. d. Ins. Apt., I, p. 390.  
 1845. PALPIMANUS GIBBULUS LUC., Explor. de l'Algérie, Anim. Artic., p. 135, Pl. V, fig. 1.  
 1870. " " THOR., On Eur. Spid., p. 201.

This remarkable spider has, as CAMBRIDGE<sup>1)</sup> has shown, no more than *two* mamillæ, a peculiarity, which, as far as I am aware, has been observed in only two other now existing species, *Stenochilus*

1) Bibliograph. Notice, in Ann. and Mag. of Nat. Hist. 4 Ser., VI, p. 417.



*Hobsonii* CAMBR.<sup>1)</sup> from the East Indies and *Cryptothele verrucosa* L. KOCH<sup>2)</sup> from Australia, and in one extinct species, *Dielacata superba* MENGE<sup>3)</sup>, found in the Prussian Amber. That *Palpimanus gibbulus* is not, as was long supposed, destitute of claws on the first pair of legs, but has *three* almost microscopically small claws there, I have myself loc. cit. remarked.

(Pag. 528.) *Stalita tænaria*.

***Stalita tænaria* SCHIÖDTE 1847.**

- Syn.*: 1847. STALITA TÆNARIA SCHIÖDTE, Foreløbig Beretn. om Undersøg. over den underjord. Fauna i Hulerne i Krain og Istr., in Overs. af K. Vid. Selsk. Forhandl., 1847, p. 80.  
 1849. " " id., Bidrag til den underjord. Fauna, in K. Danske Vid. Selsk. Skrift., 5 Række, Naturvid. og mathem. Afd., Bd. II (1851), p. 22, Tab. II, fig. 3.  
 1870. " " THOR., On Eur. Spid., p. 155.

***Stalita Schiødtei* THOR. 1870.**

- Syn.*: †1862. STALITA TÆNARIA KEYSERL., Beschreib. einer neuen Spinne aus d. Höhlen v. Lesina, in Verhandl. d. zool.-bot. Gesellschaft in Wien, XII, p. 540 (2), Tab. XVI, fig. 1.  
 1870. " SCHIÖDTEI THOR., On Eur. Spid., p. 156.

Concerning *S. Schiødtei*, which has been captured in the subterranean caverns of Lesina (Dalmatia), and which differs from *S. tænaria* by, among other peculiarities, having 6 rudimentary eyes, see THOR., loc. cit. — SIMON states<sup>4)</sup> that *S. Schiødtei* was found "à l'entrée de la grotte, dans une demi-obscurité", and places this circumstance in connexion with the presence of rudimentary eyes in the species. It would have been of some interest to have learnt from what source SIMON has derived this statement, or whether it is a mere supposition. He does not appear himself to have seen any specimens

1) Of some new gen. and spec. of Aran., in Proceed. of the Zool. Soc., 1870, p. 729 (3), Pl. XLIV, fig. 1.

2) Die Arachn. Austral, p. 240, Tab. XX, fig. 2.

3) In KOCH u. BERENDT, Die im Bernstein befindl. Crust., Myriap. u. Arachn. d. Vorwelt, p. 94; — MENGE, Lebenszeichen vorweltlicher, in Bernstein eingeschloss. Thiere, p. 9.

4) Not. sur les Arachn. cavernicoles et hypogés, in Ann. de la Soc. Ent. de France, 5 Sér., I (?) (1872), p. 217.

of *S. Schiødtei*. — *S. tænarica* was, according to SCHIÖDTE, found in the Adelsberg- and Magdalena-caverns in Krain, not in the island of Lesina, as SIMON (loc. cit., p. 242) assumes.

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### *Additions and Corrections.*

Pag. 3. *Epeira angulata* (CLERCK); — pag. 492. *E. angulata* BLACKW. — I have sent a full-grown Swedish female specimen of *E. angulata* (CLERCK) to Mr CAMBRIDGE, who 'feels no doubt whatever, that it is specifically identical with the English *E. angulata* BLACKW'.

On pag. 5, line 13 ought to be effaced, for *Ar. angulata* SULZ. is by no means, as C. KOCH states, the same species as *E. patagiata* (CLERCK), but is either identical with *E. angulata* (CLERCK) or with *E. regia* C. KOCH, a fact, of which I have been able to convince myself since I have succeeded in obtaining a copy of SULZER's 'Geschichte der Insekten'.

Pag. 4. *E. Nordmanni* THOR. — In the only male of *E. Nordmanni* that I possess, the humeral protuberances of the abdomen are not nearly so large as in the female, scarcely larger than in *E. diademata*; the bulbus has at its apex a long and stout spine directed downwards, which is obliquely bent outwards so as to form an almost J-shaped curve, of a red or brownish colour, slightly dilated at the slender extremity and very obliquely truncated. In another male, which in the position of the eyes, the colour of the sternum and the form of the tibiæ of the 2:nd pair agrees with *E. Nordmanni* ♂, but yet appears to be different from it, the above-mentioned long and stout spine, that hangs down at the apex of the bulbus, is still longer, bent outward spirally or somewhat in the form of an S, bright black, and tapering pretty uniformly towards the apex. The much incrassated tibiæ of the 2:nd pair taper somewhat towards the base and apex; the coxæ of the 2:nd pair have a conical spine of about the same length as the spine on the coxæ of the 1:st pair; the humeral protuberances are small and indistinct. The colour is particularly dark: the cephalothorax, above, is blackish brown, with the pars cephalica somewhat paler, the legs blackish brown, the tibiæ and metatarsi with a broad pale ring at the base and another narrower, more or less distinct similar ring in the middle; the tarsi are pale at the base. The sternum is blackish brown, without any light

middle spot. The abdomen above is blackish, with somewhat indistinct marking, which closely resembles that of very dark specimens of *E. diademata* or *E. angulata*. The belly is black, with two yellowish spots towards the hinder extremity. The cephalothorax is  $5\frac{1}{2}$ , the 1st pair of legs 22 millim. long. This form may for the present be distinguished by the name of *E. sinistra*. — Another, as it would seem, very nearly allied species from Tirol has been described by L. KOCH under the name of *E. sæva* <sup>1)</sup>.

Pag. 14, 491. *Epeira umbratica* WESTR., BLACKW. — To the synonym: "1866. *Epeira umbratica* MENGE, Preuss. Spinn." etc. should be added: (*ad part.*: ♀; non ♂).

The male described and figure by MENGE as *E. umbratica* ♂ is evidently another species, as may be seen from the description and figure of its palpi, the bulbus genitalis of which has a strong *bifid* process on the under side. In *E. umbratica* the corresponding process has quite another form: see above, p. 517. The male specimen which MENGE described, is, as he had the kindness to inform me, no more in existence; I believe however that it was nothing more than a dark specimen of *E. sclopetaria* (CLERCK), unless it belonged to a species, of which I have received a few specimens (from Austria) of Mr L. VON KEMPELEN and which I call *E. ixobola*.

This *E. ixobola* n. is closely allied to *E. sclopetaria* (CLERCK) or *E. sericata* C. KOCH, BLACKW., but is easily distinguished not only by a slight difference in its colours, but also by the male's organs of copulation. The large, cloven process on the under side of the bulbus is, as in *E. sclopetaria*, *bifid* to not quite half its length; but the narrower branch is something *longer* than the broader, and almost uniformly broad, whereas in *E. sclopetaria* it is *somewhat shorter* than the other branch, tapering and *pointed*. The vulva is drawn out in the form of a backward-directed, narrow, straight stilus of almost uniform breadth, which is several times longer than it is broad (rather longer than in *E. sclopetaria*). The cephalothorax is more marbled with a paler colour than in *E. sclopetaria*, the pars thoracica being behind brownish yellow, and its side-borders also to a tolerably considerable breadth brownish yellow; similarly a good part of the pars cephalica above is brownish yellow, with a dark middle-line extending from the posterior eyes to the centre fovea of

1) Beitrag z. Kenntn. d. Arachn.-fauna Tirols, 2:te Abhandl., in Zeitschr. d. Ferdinandeums, 1872, p. 323.

the cephalothorax, and usually a little black spot on either side of that line. In the male the cephalothorax seems to be more uniformly dark brown. The abdomen is of about the same colour as in *E. scolopetaria* and in *E. Jenisonii* C. KOCH<sup>1)</sup>; it is without the notch in the anterior margin that distinguishes *E. umbratica*, and is moreover not so depressed as in that species. In the few specimens that I possess, the markings on the back of the abdomen are rather indistinct, but seem to be like those in C. KOCH's figures of *E. Jenisonii*, though much darker. The markings of the belly consist of two yellow, longitudinal, slightly inward-curved or almost straight bands, which converge a little towards the anus, enclosing a black field narrowing backwards and *longer than it is broad*; in *E. scolopetaria* on the contrary the two yellow bands on the belly are at first parallel or slightly divergent, with their hinder ends sharply curved inwards; the dark field between them in this species is broader than, or *at least as broad as it is long*.

I have been of the opinion that *E. ixobola* is the same species as *E. Jenisonii* C. KOCH, but Dr L. KOCH, to whom I have sent specimens of *E. ixobola*, thinks that they are different.

Pag. 15. *Epeira scolopetaria* WESTR.; p. 491. *E. sericata* BLACKW. — Add to synonyms:

1866. *EPEIRA UMBRATICA* MENGE, Preuss. Spinn., I, p. 55, Pl. 6, tab. 6  
(*ad part.*: ♂; non ♀).

On *E. umbratica* MENGE ♂, see preceeding page; on *E. scolopetaria* HAHN and *E. Armida* SAV. et AUD., see p. 531. — Dr C. NYSTRÖM has captured a ♀ *ad.* of *E. scolopetaria* (CLERCK) in Newfoundland; according to BLACKWALL<sup>2)</sup> this species is common in Montreal, Upper Canada. It is probably this species which GIEBEL<sup>3)</sup> means, when he mentions "*E. apoclista*" among spiders from Illinois.

Pag. 16, 491. *Epeira patagiata* WESTR., BLACKW. — The syn.: "1776. *Aranea angulata* SELZ." etc. should be expunged: see above, p. 544. Add instead of it:

1789. *ARANEA PICTA* RAZOUM., H. N. du Jorat, I, p. 242 (*salt. ad part.*).

1) In HERR-SCHÄFF., Deutschl. Ins., 127, 16 (*sec.* Die Arachn.); Die Arachn., XI, p. 126, Tab. CCCLXXXIX. figg. 928. 929.

2) Notice of Spid. captured... in Montreal, etc., in Ann. and Mag. of Nat. Hist., 4 Ser., VIII (1871), p. 436.

3) Ueber einige Spinnen aus Illinois, in Zeitschr. f. die gesammte Naturwissenschaft., XXXIII (1869). p. 249.

Pag. 17, 419. *Epeira lutea* WESTR., BLACKW. — The spider which RAZOUMOWSKY (H. N. du Jorat, I, p. 304) describes under the name of *Aranea lutea*, is probably the young of *E. diademata*, Var. *peleg* (*myagria*), or of *E. marmorea*, Var. *pyramidata*.

Pag. 22. *E. Westringii* WESTR. — In my collection, among specimens of *E. cucurbitina*, I have found a few females from Sweden (Sättra) and Austria, which belong to the form that L. KOCH has described under the name of *E. alpica*<sup>1)</sup>. They have in fact the belly in the middle *blackish, with 4 yellow spots arranged in a square* and with only 1 or 2 pairs, if any at all, of black points at the posterior part of the back of the abdomen. (In *E. cucurbitina* the belly is greenish, without spots, having rarely two small yellow spots behind, besides the 4 usual little yellow spots round the mammillæ; moreover the abdomen has on the hinder part of the back 3—5 pairs of black points). The scapus of the vulva seems to be longer than in *E. cucurbitina*; the tibiæ, metatarsi and tarsi are black at the apex, at least on the hind pairs. The male of *E. alpica* is, according to L. KOCH, principally distinguished from *E. cucurbitina* ♂ by the process on the inner side of the tibial joint of the palpus being shorter and thicker than in this latter, and rounded, not pointed as in *E. cucurbitina* ♂, as also by the row of spines on the under side of the thighs of the posterior legs not reaching farther than to the *middle* of the thigh, whereas in *E. cucurbitina* ♂ they reach quite to the *apex* of the thigh. (In the Swedish specimens of this latter species this is not however always the case as regards the 4:th pair; the row is often, excepting on the second pair, broken off in the middle, especially in the 1:st pair). I also captured at Sättra a ♂ *ad.* which seems to belong to *E. alpica*. In this ♂ the cephalothorax is destitute of dark lateral bands, the inner process of the tibial joint of the palpus is shorter and blunter than in *E. cucurbitina* ♂, the almost mussle-shaped bulbus has along its outer side a very large appendage, which curves downward along the whole length of the bulbus and extends some distance behind it: its upward directed margin is about three times as long as it is broad, of almost uniform breadth, transversally striated, brownish, with the outer egde turned up, black. The posterior thighs have only 3 spines on the under side, between the base and the middle.

1) Beitrag z. Kenntn. d. Arachn.-fauna Tirols, in Zeitschr. d. Ferdinandeums, 1869, p. 173 (25).

The type-specimen of *E. Westringii* (dried), the only full-grown female of this species that I have ever seen, so closely resembles *E. alpica* ♀, that I can only distinguish it by the colour of the abdomen. This specimen is certainly somewhat larger than the examples of *E. cucurbitina* usually met with in Sweden; the cephalothorax is however not more than 3 millim. (the same measure is given by L. KOCH as that of *E. cucurbitina* and *E. alpica*), not longer than patella + tibia of the 4:th pair. The cephalothorax is without dark lateral bands; the legs are brownish yellow, the tibiæ, metatarsi and tarsi brown at the apex. The abdomen is somewhat drawn out in the middle, in front, not uniformly and semi-circularly rounded; it has on the upper side, behind, *three* pairs of black points; its sides are red, as is also the region immediately above the anus; the back exhibits a greenish white band on each side; within these bands the back is surrounded by two greenish bands, which at the posterior extremity, where they meet, become reddish and unite with the red spot above the anus. Within these bands again the back is occupied by a narrowly egg-shaped or lanceolate, greenish white area, which is divided into two by a middle band greenish in front and reddish behind, with irregular edges and tapering backwards to a line. The belly is greenish in front, with a reddish shade behind, and shows *indications* of 4 large yellowish spots arranged in a square. The scapus of the vulva seems to be longer than in *E. cucurbitina*, furnished with bristles at the base, in front, just as in *E. alpica*. — Dr L. KOCH informs me, that he has lately in the neighbourhood of Nürnberg captured three full-grown female specimens of *E. Westringii*.

A full-grown (dried) ♂, captured here at Upsala by Dr HAGLUND, which I refer to *E. Westringii*, resembles the female as regards the colour of the abdomen above and at the sides; there are however *four* pairs of black points on the back, behind; the legs have a little stronger shade of red than in the female, and the thighs are somewhat paler at the base: in other respects the legs have the same colour as in the ♀. The cephalothorax is destitute of dark lateral bands. The spines on the under side of the thighs are very long, 8 in a row on the anterior pairs: these rows reach quite to the apices of the thighs *on the four posterior legs also*, and are not interrupted. The forward-curved process above at the base of the lamina, which in *E. cucurbitina* and *E. alpica* terminates in a button-like knob, is here at the extremity *bent down almost at a right*

angle, thus forming a thick blunt hook. The inner process of the tibial joint is tolerably sharp, as in *E. cucurbitina*. The bulbus exhibits on the outer side a thin lamina, obliquely truncated and directed outwards, and immediately beneath it a slightly curved, sharp spur, also directed outwards.

Judging from the males here described, both *E. alpica* and *E. Westringii* appear to be good species; but the females of the three forms in question, especially those of *E. alpica* and *E. Westringii*, are sometimes extremely difficult to distinguish. I doubt whether the presence of the four yellow spots on the belly is a constant characteristic of these two last mentioned species: I have at least one specimen (a ♀, for which I am indebted to the kindness of Dr ZIMMERMANN), which has not these spots, but which seems to me to belong either to *E. alpica*, or more probably to *E. Westringii*, with which it agrees in the number of black points on the hinder part of the abdomen. Whether the abdomen is a little drawn out in front, or uniformly rounded, seems to be of no consequence; for the first-mentioned peculiarity of form is not confined to *E. Westringii*, but occurs also in some specimens of *E. cucurbitina* and in one of my examples of *E. alpica*.

It is possible that *E. ornata* BLACKW. (vid. sup., p. 491) is identical with *E. Westringii*; perhaps even *Miranda squamosa* SEIDEL 1849<sup>1)</sup>, which I referred above, p. 23, with an interrogation to *E. cucurbitina*, is a young *E. Westringii*, though this does not appear to me probable. — *E. ornata* CANESTR. (= *E. Canestrinii* THOR.: vid. sup., p. 491, note 2) is an entirely different species.

Pag. 23, 491. *Epeira agalena* WESTR., BLACKW. — I have received from Prof. CANESTRINI under the name of *Epeira agalena* WALCK. a spider from Italy (Modena), which I have also myself captured at Lago Maggiore, and which is quite different from the species which I, with C. KOCH, WESTRING, BLACKWALL and others,

1) "Länge des Weibchens 1<sup>'''</sup>, des Männchens  $\frac{3}{4}$ '''". — Vorderleib klein, eben so wie die Füße grünröthlich gefärbt; Hinterleib länglich eiförmig, platt, orangenartig, ohne Zeichnung, ganz mit weissen, roth eingefassten Schuppen bedeckt, die nach den Spinnwarzen zu endlich ganz roth werden. Die meisten Exemplare zeigen zwischen dem Roth noch einen grünen Schimmer. An der Stelle der blattartigen Zeichnung befindet sich auf jeder Seite fünf schwarze Punkte, deren Grösse nach den Spinnwarzen zu zunimmt". — SEIDEL, Über die Schles. Arten... d. Epeirides u. d. Theridides, in Uebers. d. Arbeiten u. Veränd. d. Schles. Gesellsch. f. vaterl. Kultur, 1848, p. 110.

have called *E. agalena* WALCK. The female of this South-European species, which I, with Dr L. KOCH, take to be *E. dalmatica* DOLESCHALL <sup>1)</sup> and which appears to be but little known, is about 7 millim. long, its cephalothorax 3, the 1:st pair of legs 11 millim.; the abdomen is  $4\frac{3}{4}$  millim. long and nearly as much in breadth. It is therefore not inconsiderably larger than *E. agalena* (C. KOCH), CET. The area af the centre eyes is rectangular or a trifle broader before than behind. The posterior centre eyes are considerably larger than the anterior, and the anterior lateral eyes, which make with the anterior centre eyes a line almost straight, scarcely perceptibly curving backwards, are separated from the anterior centre eyes by an interval double as great as that between the two anterior centre eyes. The cephalothorax is brownish yellow, mottled more or less distinctly with dark brown on the pars cephalica, and has sometimes dark radiating lines on the pars thoracica. The legs are brownish yellow, the thighs at the apex blackish brown, the remaining joints have brown rings. The sternum is dark brown; along the middle it has a large, oblong, yellow spot narrowing behind. The abdomen, which is broad and short, triangular with the corners rounded off, without projecting humeral protuberances, is brownish yellow above; in the extreme front it exhibits a triangular spot enclosed in paler lines, which is continued backwards as a more or less distinct, lanceolate middle area along the back; in the midst of the back are 4 black points, so disposed as to form a trapezium, and towards the sides, from the middle to the anus, two undulating blackish lines extend, which converge towards the anus, forming in front a very open, almost right angle with each other. The midst of the belly behind the rima genitalis is occupied by a black transversal area, which is bounded by 4 large yellow spots: the two spots that are on the same side are on their outer side united by a narrower yellow longitudinal stripe, thus together forming a (- or [-shaped band; within the black area bounded by these two bands, may sometimes be seen two small yellow points, and immediately behind the hindermost of the above mentioned four spots two other large yellow spots close before and beside the mamillæ: at the sides of these, more backward, two smaller yellow spots may in general be found. The vulva is drawn out into a scapus, which is usually about double as long

1) System. Verzeichn. d. im Kaiserthum Oesterreich vorkomm. Spinn., in Sitzungsber. d. mathem.-naturwissensch. Classe d. Akad. d. Wissensch. in Wien, IX (1852), p. 28.



as it is broad and of which the almost triangular, flattened terminal portion regularly tapers to the somewhat blunt apex.

*E. dalmatica* DOLESCH. can hardly be identical with *E. drypta* WALCK. <sup>1)</sup>, as WALCKENAER states the length of that species to be only "1½ lig.", and says: "Point d'oviducte apparent" <sup>2)</sup>. Dr L. KOCH thinks that *E. drypta* is nothing more than a young, undeveloped *E. agalena*, which indeed appears to me very probable.

Pag. 24, 492. *Epeira ceropegia* WESTR., BLACKW. — Add to the synonyms:

†1834. *EPEIRA SCLOPETARIA* HAHN, Die Arachn., II, p. 46, Tab. LVII, fig. 131.

1835. *MIRANDA CEROPEGIA* C. KOCH, in HERR.-SCHÄFF., Deutschl. Ins., 129, 12, 13 (sec. Die Arachn.).

1839. " " ID., Die Arachn., V, p. 51, Tab. CLVIII, fig. 370.

1859. *EPEIRA CEROPEGIA* L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Tirols, in Zeitschr. d. Ferdinand., 1869, p. 168 (20).

I have above (p. 24) assumed, that *Mir. ceropegia* C. KOCH (*Ep. sclopetaria* HAHN) is a different species from the true *E. ceropegia* WALCK., BLACKW., WESTR., or *Miranda ceropegia* MENGE; *M. ceropegia* C. KOCH I considered identical with the species mentioned by me under the denomination *E. Victoria*. These views were founded, partly on the smaller size of *E. ceropegia* WALCK., CET., compared with that of *E. Victoria* and *Mir. ceropegia* C. KOCH, and on the difference in the form of the abdomen, which I however afterwards found to vary with the animal's age etc., partly, and indeed principally, on the circumstance that the scarpus of the vulva in *E. Victoria* — which species is of the same size as *Mir. ceropegia* C. KOCH — is not "short and conical", as, according to MENGE's description, it is in *Mir. ceropegia*. Through the kindness of Prof. MENGE I have lately been afforded an opportunity of seeing one of the two type-specimens of his *M. ceropegia*, and have found it to be a young, imperfectly developed female (no doubt of *M. ceropegia* C. KOCH), which accounts for MENGE's description of the vulva. Adult specimens of both sexes of "*M. ceropegia* C. KOCH" I have lately received from Dr L. KOCH, and by comparing them with the type-specimen of BLACKWALL'S *E. ceropegia* (a ♂), with which I have been kindly favoured by the Rev. Mr CAMBRIDGE, I have convinced myself that these two species are identical. Lastly as regards WALCKENAER'S

1) *Aranea drypta* WALCK., Faune Par., II, p. 198; *Epeira drypta* ID., Tabl. d. Aran., p. 59.

2) WALCK., H. N. d. Ins. Apt., II, p. 35.

*E. ceropegia*, it seems probable, that he, like WESTRING and MENGE, had seen only imperfectly developed specimens of the species. Mr SIMON informs me, that he has compared specimens of both sexes of *E. ceropegia* from the neighbourhood of Paris with specimens from Germany, which he had received from Dr L. KOCH under that name, and that he could not discover any difference between them. It would therefore seem to be placed beyond a doubt, that *M. ceropegia* C. KOCH is nothing else than a synonym to *E. ceropegia* WALCK., CET.

As to *E. Victoria* THOR. on the contrary, its vulva is so different from that of *E. ceropegia*, that I cannot believe that it is the same species<sup>1)</sup>: to judge from that organ, *E. Victoria* is more nearly allied to *E. hirsuta* HAHN<sup>2)</sup> or *Miranda hirsuta* C. KOCH<sup>3)</sup> — which is probably identical with *E. Armida* SAV. et AUD. 1825—27<sup>4)</sup> — than to *E. ceropegia*, as has already (p. 25) been intimated; but in other respects it is so similar to *E. ceropegia*, that I am quite unable to distinguish undeveloped specimens of these two forms.

The female of *E. Armida* SAV. et AUD. or *E. hirsuta* HAHN very closely resembles *E. ceropegia* and *E. Victoria*, with which it may easily be confounded. In *E. ceropegia* and in *E. Victoria* the thighs of the first three pairs have a dark spot or stripe on the under side, and are also usually provided on the upper side with black spots or bands (they are not entirely or almost entirely black, as is the case in *E. carbonaria* L. KOCH<sup>5)</sup>). In *E. Armida* or *hirsuta* all the thighs are on the under side of completely uniform colour, brownish yellow: above they are, to say the most, slightly infuscated at the extreme apex. In *E. Armida* (*hirsuta*) the leaf-like pattern on the back of the abdomen is narrower, especially behind, than in *E. Victoria* and *E. ceropegia*, and the broad blackish band which borders it, is everywhere distinct, and is, in the hinder part of the field, at the inner border only very slightly undulated, sometimes almost straight. The belly in *E. Armida* has a broad yellow

1) L. KOCH, to whom I had sent the type-specimens of *E. Victoria* (two adult females from Dalmatia), tells me that among the numerous examples of *E. ceropegia* in his cabinet, there is not a single one that in the form of the vulva resembles *E. Victoria*.

2) Die Arachn., I, p. 13, Tab. III, fig. 9.

3) Ibid., XVI, p. 75, Tab. DLXIII, fig. 1550.

4) Descr. de l'Égypte, 2<sup>e</sup> Éd., XXII, p. 337, Arachn., Pl. II, fig. 8.

5) Beitr. z. Kenntn. d. Arachn.-fauna Tirols, in Zeitschr. d. Ferdinandeums, 1869, p. 168 (20).

middle band, and on each side of this a rather small yellow spot, which is usually continued backwards gradually tapering, without fully reaching the yellow spots which are situated in the neighbourhood of the mamillæ; these indeed are surrounded by 6 (or 8) spots, of which the four anterior are the largest and form a trapezium, which is nearly double as broad behind as before: the two foremost of these spots are situated quite near the hinder extremity of the middle band. In *E. ceropegia* and *E. Victoria* the marking of the belly is the same as in *E. Armida*, but the two foremost yellow spots are usually united by a yellowish line or band with the two spots immediately behind the posterior extremity of the middle-band, so as to form a (- or [-shaped band on each side; there is frequently (at least in my specimens of *E. Victoria*) found, between and behind the last-mentioned spots, behind the posterior extremity of the middle band, a little yellow spot. The greater (anterior) part of the middle band is sometimes altogether missing, and in some cases the lateral bands are broken. — The vulva does not appear to me to indicate any considerable difference between *E. Armida* and *E. Victoria*; the scapus is however a little longer and narrower in the former than in the latter (see above, p. 25). In *E. Victoria* it is about four times as long as it is broad at the base (from the first curvature to the apex about three times as long as it is broad). In *E. ceropegia* the scapus vulvæ has the form of a broad, thick, brown, almost triangular or heart-shaped lamina slightly rounded in the sides and in front and about as broad at the base (i. e. where it is bent backwards) as it is long; its backward directed apex is drawn out into a narrow compressed point very slightly bent downwards.

The males of *E. Armida* and *E. Victoria* are not known to me. In *E. ceropegia* ♂ the tibial joint of the palpus is somewhat shorter than the patellar joint: on the outer side it is dilated into a broad, thick and in the outer border slightly emarginated lamina, the anterior angle of which is drawn out somewhat forward into a stout, short, at the extremity somewhat rounded lobe; the posterior angle is somewhat projecting, almost rectangular. The tarsal joint or lamina bulbi has at the base on the outer side a stout, forward-curved, in the middle somewhat attenuated, at the apex slightly dilated and rounded appendage. The bulbus presents several strong, horny, lamellar processes, of which three, situated towards the outer side, and directed either outwards or (when the bulbus is so turned that the lamina lies on its under side) more upwards, are especially

conspicuous: one in the middle, which is oblong, curved a little forward and at the anterior edge slightly emarginated and denticulated, the two others nearer the apex, the one of them triangular and pointed, the other, which is situated immediately under (outside) and parallel with this, long and slender, of almost uniform breadth, somewhat curved, blunt at the extremity. The tibiæ of the 2:nd pair are incrassated near the apex and are there armed with some strong spines.

C. KOCH erroneously classes *Ar.* and *Ep. adianta* WALCK. under *E. (Mir.) ceropegia*. — To me it seems probable, that the spider figured in SULZER's Kennzeich. d. Ins., Tab. XXII, fig. 149, as also that in SCHÆFFER's Ic. Ins. Ratisb., I, Tab. XIX, fig. XII, which two figures C. KOCH refers to *M. ceropegia*, do not belong to that species, but rather to *E. adianta* WALCK.

Pag. 26. *Singa Herii* WESTR.; pag. 492. *Epeira anthracina* BLACKW. — Add to the synonyms:

1861. SINGA HERII MENGE, PREUSS. Spinn., I, p. 84, Pl. 13, tab. 23, A—I.

1871. " PYGMÆA AUSS., Neue Radspinnen, in Verhandl. d. zool.-bot. Gesellsch. in Wien, XXI (1871), p. 825 (11).

Prof. MENGE has lately favoured me a ♀ *ad.* of his *S. Herii*, which perfectly agrees with the Swedish *S. pygmaea* (SUND.): the cephalothorax is dark brown, with yellow margins. — On this species see also above, p. 455 et seq.

Pag. 30. *Singa prominens* WESTR.; p. 491. *Epeira bella* BLACKW. — Add to the synonyms:

?1869. MIRANDA CARINATA GIEBEL, Am Vierwaldstädter See, in Zeitschr. f. die gesamt. Naturwissensch., XXXIV, p. 301.

Pag. 33. *Zilla Rossii* THOR. — This species is identical with *Theridion mandibulare* LUC. (*Pachygnatha? mandibularis* CAMBR.), under which name I have received specimens from Mr SIMON and the Rev. O. P. CAMBRIDGE. Several specimens, among which is a ♂ *ad.*, have been captured in the island of Iviza and given to me by Dr F. S. SÖDERLUND. I do not as yet see the necessity of removing this spider from the genus *Zilla*, and therefore call it *Z. mandibularis* (LUC.)<sup>1</sup>.

<sup>1</sup>) *Zilla mandibularis* (LUC.) 1845—47.

Syn.: †184.. THERIDION MANDIBULARE LUC., Explor. de l'Algérie, Anim. Art., I, p. 260, Pl. XVII, fig. 1 (= ♂).

1847. " " WALCK., H. N. d. Ins. Apt., IV, p. 487.

*Z. mandibularis* is very like *Ther. undulatum* WESTR. (vid. sup., p. 88); but in this latter species the cephalothorax is of a darker brown or blackish colour; the area of the four centre eyes is very distinctly broader behind than before, the clypeus is as high as the area of the centre eyes is long etc., whereas in *Z. mandibularis*, as in the Epeiroidæ in general, the clypeus is very low, not as high as the area of the centre eyes, and this area scarcely broader behind than in front.

Pag. 36. *Meta fusca* WESTR.; p. 492. *Epeira antriada* BLACKW. — Add to the synonyms:

1841. *META* MERIANÆ C. KOCH, Die Arachn., VIII, p. 121, Tab. CCLXXXVI, figg. 688—690.

1866. „ *MURARIA* MENGE, Preuss. Spinn., I, p. 88, Pl. 14, tab. 25.

Specimens of both sexes of *Meta muraria* MENGE, kindly sent me by Prof. MENGE himself, do not show the least difference from *Meta fusca* WESTR. or *E. antriada* BLACKW. — *M. muraria* C. KOCH (Die Arachn., VIII, p. 125, Tab. CCLXXXVIII, figg. 693, 694) is probably only a variety of *Meta segmentata* (*Epeira inclinata* BLACKW., *Zilla reticulata* C. KOCH).

1859. *EPEIRA DIVERSA* BLACKW., Descr. of some newly disc. spid. capt. in... Madeira, in Ann. and Mag. of Nat. Hist., 3 Ser., IV, p. 262 (9).

1870. *ZILLA ROSSII* THOR., Rem. on Syn., p. 33.

1871. „ „ AUSS., Neue Radspinnen, in Verhandl. d. zool.-bot. Gesellschaft. in Wien, XXI, pp. 828, 829 (14, 15).

1872. *PACHYGNATHA* (?) *MANDIBULARIS* CAMBR., Spid. of Palest. and Syria, in Proceed. of the Zool. Soc., 1871, p. 294.

*Femina*: vid. sup., p. 33.

*Mas* a femina præsertim forma mandibularum et palporum differt; pedum prop. 1, 4, 2, 3 (in ♀ 4:ti paris pedes eadem sunt longitudine ac pedes 1:mi paris). Mandibulæ longissimæ, porrectæ, divaricantes, cephalothorace parum breviores, femoribus 1:mi paris multo crassiores, a medio ad apicem sensim paullo angustatæ, subter spinis 2 validissimis armatæ, quarum una paullo pone medium sita est, sub-sinuata, anteriora versus et deorsum directa, ad basin, præsertim subter, valde incrassata, ibique, ut ipsa mandibula pone hanc spinam, pilosa, supra vero in medio tuberculo vel dente minuto prædita; altera, in medio inter apicem mandibulæ et spinam illam sita, hac parum brevior est, magis conica et recta. Unguis mandibulæ valde longis et fortis. Palpi longi et tenses, fere ad basin tibiæ 1:mi paris pertinentes, testacei, clava fusca; pars patellaris cylindrata, triplo longior quam latior, pars tibialis longitudine fere partis patellaris, versus apicem sensim et leviter incrassata; lamina parva, ovata, parte patellari brevior et apice ejus vix dimidio latior; bulbus parvus, subter versus medium dente nigro subporrecto munitus: versus latus exterius primum procursum crassiorem fuscum et tum laminam tenuem, versus basin angustatam, sub-procurvam, flavam ostendit.

Pag. 39. *Meta segmentata* WESTR.; pag. 492. *Epeira inclinata* BLACKW. — From the synonyms given under this species, those taken up under "Var.  $\beta$ " should be effaced, as this "Var.  $\beta$ " appears to be a separate species: see next article. See also preceeding page.

Pag. 40. *Meta albimacula* WESTR. — Instead of "*= Meta segmentata* (CLERCK) 1757, Var.  $\beta$ , *Mengei*", read: *= Meta Mengei* (BLACKW.) 1870, and add:

Syn.: †1861. *META ALBIMACULA* WESTR., Aran. Suec., p. 82.

1866. " *SEGMENTATA*, Var.?, MENGE, Preuss. Spinn., I, p. 88, Pl. 14, tab. 24, fig. *M*.

1870. *EPEIRA MENGEI* BLACKW., Descr. of a new spec. of *Epeira*, in Ann. and Mag. of Nat. Hist., 4 Ser., IV (1869), p. 398.

1870. *META SEGMENTATA*, Var. *Mengei* THOR., Rem. on Syn., p. 40.

I have these last years received several English and German specimens of *M. albimacula* WESTR., preserved in spirit of wine, and have thus been able with greater precision to study its sexual organs, which appear to show, at least in the male, such differences from those of *M. segmentata*, that it cannot well be doubted that it is a good species. As however WESTRING only by a mistake gave this species the name *albimacula*, taking it to be identical with *Zilla albimacula* C. KOCH (*E. diodia* WALCK.), there is certainly no reason to retain that name, and I therefore call this spider *Meta Mengei* (BLACKW.). — In both *M. segmentata* and *M. Mengei* the bulbus genitalis of the male, on the outer side, near the apex, exhibits a horny, generally brown band or half-ring, which curves from the upper (outer) margin of the lamina to the apex of the under side of the bulbus; this band becomes *broader towards the apex* in *M. segmentata*, but in *M. Mengei* it becomes *narrower towards the apex*. The *hairless* process of the tibial joint is in both species provided with a tooth, which in *M. segmentata* is situated at the *base*, in *M. Mengei* near the *middle* of the process. The females are more difficult to distinguish. In *M. segmentata* the vulva consists of a little transversal area close to the rima genitalis, which by two small depressions or notches in the posterior margin is divided into three parts, of which the two exterior are small and formed each of a low dark tubercle, the middle part is larger, transversal, limited behind and at the sides by an elevated, in general yellowish edge and slightly excavated on both sides above. In *M. Mengei* the vulva has the same appearance, excepting that it is longer, and its posterior edge not so distinctly three-lobed: the middle part is occu-

pied by two in general very distinct foveæ, and has a stronger, shining, dark elevation or tubercle on each side.

Pag. 40, 459. *Tetragnatha extensa* WESTR., BLACKW. — On this species see above, p. 459. — I have lately from Prof. MENGE received a ♂ and a ♀ of *T. extensa* L. KOCH (*T. Solandri* N.) under the name of *T. extensa* MENGE, which therefore, at least *ad part.*, should be taken up among the synonyms of: "Forma *T. Solandri* (SCOP.)".

Pag. 43. *Mithras paradoxus* WESTR. — In a paper lately published, SORDELLI <sup>1)</sup> has shown that this spider belongs to the Epeiridæ, and that it fabricates a web in the form of a circular sector, as I had stated already in 1858 <sup>2)</sup>.

Pag. 56. *Linyphia leprosa* OHL. — Add to the synonyms of this species:

1871. LINYPHIA CONFUSA CAMBR., Descr. of some Brit. Spid., *cet.*, p. 427, Pl. 55, No. 21, a—d, f, g.

Pag. 64. *Linyphia rufa* WESTR., *L. scopigera* GRUBE. — The suspicion expressed by me, that GRUBE had confounded some other species with the female of his *L. scopigera*, is certainly erroneous; I have myself lately received female specimens of *L. scopigera*, in which the back of the abdomen is not of a uniform colour, as is usually the case, but marked with "striæ transversæ ad extremitatem congestæ". — On *Ther. rufum* REUSS, see pag. 133.

*Bathyphantes cristatus* MENGE <sup>3)</sup> or *Linyphia cristata* N. has lately been captured in Småland by Mr G. A. W. WETTER. It had not till now been known to belong to the fauna of Sweden.

Pag. 65. *Linyphia pygmæa* WESTR. — Add to the synonyms of "Var. *a* (forma principalis)":

1858. THERIDIUM HENRICÆ SIX, Lijst van Spinn., *cet.*, in HERKLOTS, Bouwstoffen voor eene Fauna v. Nederland, II, p. 294.

Dr VAN HASSELT has favoured me with specimens of *Th. Henricæ* <sup>4)</sup> determined by Mr SIX himself.

1) Intorno alla tela ed ai costumi di una specie di Ragno (*Mithr. parad.*), in Atti della Soc. It. di Sc. Nat., XIV, IV, pp. 1—11.

2) THOR., Till känned. om slägt. *Mithras* o. *Uloborus*, in Öfvers. of Vet.-Akad. Förhandl., XV, p. 202 et seq.; On Eur. Spid., pp. 69—71.

3) Preuss. Spinn., I, p. 121, Pl. 22, tab. 46.

4) "Thorax pedibusque flavis, abdomine superne rubro, lineis transversis nigris, linea interrupta alba cincto; maculis binis majoribus lateralibus albis; ventre nigro". SIX, loc. cit.

Pag. 70. *Bathypantes zebrinus* MENGE<sup>1)</sup>. — Specimens of this species, *Linyphia zebrina* N., which had not before been observed in Sweden, have lately been captured in Småland by Mr WETTER.

Pag. 70. *Linyphia concolor* WESTR.; p. 483. *Theridion filipes* BLACKW. — Of this species a paler variety occurs, in which the upper part of the abdomen is of a greyish yellow colour tinged with greenish, and exhibits a longitudinal, faintly ramified, blackish line along the back; the belly is blackish. Mr EISEN has captured such a specimen at Valdres in Norway. — From the posterior part of the vulva, between the belly and the long, narrow, backward-directed process which issues from the anterior border of the vulva and reaches at least to the middle of the belly, proceeds in *L. concolor* another similar, but much finer and shorter, backward directed stilus, which is hidden by the larger process, and can only be seen when the abdomen is viewed in profile. This stilus appears to have been overlooked as well by BLACKWALL as WESTRING and MENGE.

Pag. 83, 482. *Theridium denticulatum* WESTR., BLACKW. — Add to the synonyms:

1868. STEATODA UNDULATA MENGE, Preuss. Spinn., II, p. 158; Pl. 30, tab. 67.

Prof. MENGE has kindly sent me specimens of both sexes of his *S. undulata*. As to *Th. undulatum* WESTR., see pp. 88 and 555. — On the differences between *Ther. denticulatum*, *Th. tinctum*, *Th. varians*, *Th. petraeum* L. KOCH and *Th. pinastri* ID., see L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Tirols, 2:te Abhandl., pp. 246—255.

Pag. 87, line 14. — Instead of "*Agræca brunnea* BLACKW.", which is a lapsus calami, read: *Liocranum domesticum* (REUSS).

Pag. 93. *Theridium triste* WESTR. — Add to the synonyms:

1841. THERIDIUM TRISTE C. KOCH, Die Arachn., VIII, p. 83, Tab. CCLXXVI, figg. 653, 654.

Pag. 98. *Erigone longipalpis* (SUND.), WESTR. — From the synonyms of this species "1833. *Er. atra* BLACKW.... (salt. ad part.)" ought to be effaced. Add instead of it:

1872. ERIGONE LONGIPALPIS L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Tirols, 2:te Abhandl., pp. 281, 282.

In a paper "Om Arachnider från Spetsbergen o. Beeren Eiland",

1) Preuss. Spinn., I, p. 113, Pl. 20, tab. 39.



p. 689<sup>1)</sup>, I have erroneously taken up *E. remota* L. KOCH<sup>2)</sup> among the synonyms of *E. longipalpis*: as L. KOCH has shown (loc. cit. in *Syn.*, p. 282), these two species, which are very closely allied, may without difficulty be distinguished by the somewhat different form of the upper process of the tibial joint of the palpus of ♂, which process in *E. longipalpis* is *pointed*, in *E. remota* *rounded* at the extremity. To this may be added, that the anterior of the two more downward-directed processes, or compressed teeth, which are seen on the under side of the bulbus near its extremity, becomes *narrower towards the apex* in *E. longipalpis*, in which the apex of the tooth is blunt, but not broadly truncated, whereas in *E. remota* this tooth is much broader, *not tapering towards the apex*, which is *very broadly truncated*. — Whether the trochanters are armed with teeth or not, is of no consequence: in some of my specimens of *E. longipalpis* ♂ they have a few teeth on the inner side, but in others, f. inst. those from Königsberg and Danzig sent me by OHLERT and MENGE, they are toothless, as in *E. remota*. Of this latter species L. KOCH has kindly supplied me with specimens. — On the European species belonging to the "*E. longipalpis*-group", see L. KOCH's admirable view of these little spiders, loc. cit., pp. 281—283.

Pag. 101, 487. *Erigone dentipalpis* (REUSS), WESTR. — Add to the synonyms:

1869. ERIGONE DENTIPALPIS L. KOCH, Beitrag z. Kenntn. d. Arachn.-Fauna Tirols, p. 200 (52).

1872. " " ID., Beitrag, cet., 2:te Abhandl., pp. 282, 283.

Pag. 102. *Erigone vagabunda* WESTR.; pag. 487. *E. atra* BLACKW. — Add to the synonyms:

1869. ERIGONE LONGIPALPIS L. KOCH, Beitrag, cet., p. 200 (52).

1872. " ATTRA ID., Beitrag, cet., 2:te Abhandl., pp. 282, 283.

Pag. 124. *Erigone subæqualis* WESTR. — Add to the synonyms:

1871. WALCKENAËRA FORTUITA CAMBR., Descr. of some Brit. Spid., cet., p. 452, Pl. 57, no. 37.

Pag. 124 (the foot-note). — *Erigone sulcifrons* (REUSS) ♂ has the tibial joint of the palpi, above and somewhat outwards, drawn out into a strongly outward-curved process, which is stout at the

<sup>1)</sup> Öfvers. af Kongl. Vet.-Akad. Förhandl., XXVIII (1871).

<sup>2)</sup> Beitr. z. Kenntn. d. Arachn.-fauna Tirols, in Zeitschr. d. Ferdinandeums, 1869, p. 197 (49).

base, tapering toward the apex, and from the base of which issues a process directed outwards; the distance between the anterior and the posterior centre eyes is almost as great as that between the two posterior centre eyes, and not greater than the diameter of one of these latter eyes. In *E. bicuspis* (CAMBR.) ♂ the apex of the tibial joint, above, is drawn out into a strong, forward-directed process, tapering towards the extremity and slightly curved downwards; the distance between the anterior and the posterior centre eyes is considerably greater than the distance between the two posterior centre eyes, and is at least double as great as the diameter of one of these latter eyes.

Pag. 131. *Linyphia experta* CAMBR. — This species has been described and figured by CAMBRIDGE in his 'Descr. of some Brit. Spid.', etc., in Transact. of the Linn. Soc., XXVII, p. 429, Pl. 55, no. 23.

Pag. 131. *Erigone pinguis* WESTR. — Instead of "= *E. livida* (BLACKW.) 1836 + *E. arundineti* N.", read: = *E. livida* (BLACKW.) 1836 + *E. Clarkii* (CAMBR.) 1871. — Add to the synonyms of *E. livida* (BLACKW.):

1871. CTENIUM PINGUE MENGE, Preuss. Spinn., IV, p. 292, Pl. 53, tab. 169.

As synonyms of *E. Clarkii* (CAMBR.) may be adduced:

1871. NERIENE CLARKII CAMBR., Descr. of some Brit. Spid., etc., p. 441, Pl. 56, no. 30 (= ♂).

1871. " ARUNDINETI ID., ibid., p. 441 (= ♀).

1871. ERIGONE " THOR., Rem. on Syn., p. 131.

1872. " CLARKII L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Tirols, 2:te Abhandl., p. 262.

Pag. 142. *Erigone phæopus* WESTR.; pag. 489. *Walckenaëra depressa* BLACKW. — Add to synonyms:

1836. WALCKENAËRA DEPRESSA BLACKW., Charact. of some undescr. spec. of Aran., in Lond. and Edinb. Phil. Mag., 3 Ser., VIII, p. 482.

1864. " " ID., Spid. of Gr. Brit., II, p. 306, Pl. XXI, fig. 221.

The Rev. O. P. CAMBRIDGE has lately sent me specimens of *E. phæopus* WESTR. or *E. brevis* (REUSS) under the name of *Walcken. depressa* BLACKW.

Pag. 152. *Segestria bavarica* WESTR. — WESTRING's description perfectly suits German specimens of "*S. bavarica* C. KOCH", with which I have been favoured by Dr L. KOCH.

Pag. 152, 492. *Segestria senoculata* WESTR., BLACKW. — Add to the synonyms:

1779. ARANEA SCOPULORUM FABR., Reise nach Norwegen, p. 317.

1872. SEGESTRIA SENOCULATA MENGE, Preuss. Spinn., V, p. 300, Pl. 54, tab. 172.

Pag. 154. *Dysdera parvula* DUF. — Dr SÖDERLUND has favoured me with a small *Harpactes* from the isle of Formentera, which appears to be nearly allied to, if not identical with *D. parvula* DUF.; this species may for the present be called *H. Dufourii*<sup>1</sup>).

Pag. 154. *Dysdera punctata* C. KOCH. — The species captured by me at Nice and considered identical with *D. punctata*, is, as I see from the type-specimens of this latter (a ♂ and ♀ from Greece, kindly communicated by Dr L. KOCH), a different, though closely allied species, which may be called *D. nicænsis*<sup>2</sup>). — In the type-

1) *Harpactes Dufourii* N. — *Mas ad.* — Long. corporis c:a  $4\frac{3}{4}$  millim. *Cephalothorax* antice abrupte angustatus, impressionibus cephalicis distinctis, parte thoracica in lateribus fortiter rotundata; pæne 2 millim. longus,  $1\frac{1}{3}$  millim. latus, longitudine patellam + tibiam 4:ti paris æquans, nitidus, subtilissime reticulatus, fusco-testaceus, margine ante insertionem pedum 3:tii paris anguste nigro. *Sternum*, *partes oris*, mandibulis exceptis, *palpi* et *pedes* fusco-testacea. *Oculi* omnes inter se valde approximati, fere contingentes, anticis duobus exceptis, qui interstitio  $\frac{1}{4}$  diametri horum oculorum vix æquanti disjuncti sunt; spatium inter eos et marginem clypei vix ullum dicendum. *Mandibule* angustæ, cylindratæ, c:a  $\frac{3}{4}$  millim. longæ (patellis 1:mi paris breviores), supra rugulosæ et pilosæ, ferrugineæ. *Maxillæ* parallelæ, non in labium inclinatæ. *Palporum* pars tibialis leviter incrassata; *bulbus genitalis* pallide fusco-testaceus, simplicissimus, valde longus, anguste ovatus, in latere anteriore fortius et magis æqualiter arcuato-convexus quam in latere posteriore, apice in setam nigram excurrenti, hac seta ipso bulbo paullo brevior. *Pedes* 1:mi paris  $5\frac{1}{2}$  millim. longi; patella + tibia eorum  $2\frac{1}{3}$  millim. Femora 1:mi paris aculeo 1, 2:di paris aculeis 2 in latere anteriore, versus apicem, armata, præterea pedes 4 anteriores inermes; pedes 3:tii et 4:ti parium et in tibiis et metatarsis aculeati sunt, et in femoribus, supra: in femoribus 3:tii paris ordines binæ, altera aculeorum 3, altera 2 aculeorum adsunt; femora 4:ti paris ordinem aculeorum 3 ostendunt. *Abdomen* valde angustum, sub-lineare, fusco-testaceum, maculis parvis nigricantibus densis reticulatum, ventre cinereo-testaceo.

*Patria*: Insulæ Pithyusæ. Marem unicum, a D:re F. SÖDERLUND in insula Ophiusa (*Formentera*) captum, possideo. — Nonne a *H. parvulo* (DUF.) diversus?

2) *Dysdera nicænsis* N. cephalothorace punctis maximis sat densis impresso, sterno crasse rugoso, clypei latitudine dimidium summæ cephalothoracis latitudinis et longitudinem mandibularum fere æquanti, oculis anticis spatio dimidia diametro sua parum majore inter se distantibus, pedibus non aculeatis; bulbo ge-

specimens of *D. punctata* C. Koch the male is 7, the female about 9 millim. in length; in the male the length of the cephalothorax is a little more than 3 millim., its breadth near  $2\frac{1}{2}$  millim.; the

nitali in scapum brevem, apice duos ramos emittentem producto, quorum margines inferiores fere rectam lineam formant. — ♂ ad. Long. c.a  $6\frac{1}{4}$  millim.

Syn.: †1870. DYSDERA PUNCTATA THOR., On Eur. Spid., p. 157 (ad part.: ♂).

Mas. — *Cephalothorax* brevis, alte fornicatus, impressionibus cephalicis non nisi ad margines distinctis, punctis valde magnis sat densis undique impressus, 3— $2\frac{1}{2}$  millim. longus,  $2\frac{1}{4}$ —2 millim. latus, clypei latitudine c.a  $1\frac{1}{3}$  millim. *Sternum* crasse rugosum. *Oculi* antici sub-rotundi, inter se spatio remoti, quod eorum diametro multo minus est et dimidiam hanc diametrum parum superat; reliqui oculi inter se proximi, sub-contingentes; oculorum lateralium diameter major diametro anticorum parum brevior est; postici oculi reliquis evidenter minores. *Mandibulae* sat parvae, fere  $1\frac{1}{3}$  millim. longae, ideoque clypei latitudinem pæne æquantes, tibiis vero 1:mi paris paullo breviores, supra transverse rugoso-striatae. *Maxillae* in labium evidenter inclinatae. *Bulbus* in universum fere ut in *D. Pavesii* (vid. p. 564) conformatus: pars ejus superior breviter et inverse sub-ovata, vittis transversis sinuosis obscurioribus; scapus brevis, compressus, in latere exteriori a parte superiore sino profundo divisus, in latere vero interiori paullo dilatatus; scapi pars basalis (quæ in latere posteriore, supra, tuberculum parvum fuscum ostendit) primum igitur fere latior est quam bulbi pars superior, deorsum angustata, non longior quam latior ad basin; apice in ramos duos inæquales, in contrarias partes directos, excurrit, quorum margines inferiores angulum distinctum inter se non formant, sed secundum lineam sub-rectam sese extendunt. Ramus interior, qui longior est et cum parte basali angulum obtusum format, deorsum et paullo intus directus est; exterior, a bulbi parte superiore sinu illo profundo divisus, foras et sursum dirigitur; hic ramus brevior est, compressus, paullo sursum curvatus et acuminatus; ille longior, fere triangulus, versus apicem angustatus: ad basin lateris exterioris, antice, dentem acuminatum et, mox apud illum, interius, tuberculum parvum exhibet; ipse apex ejus obliquus in duos dentes minutos inæquales divisus est. *Pedes* aculeis carent; 1:mi paris  $8\frac{1}{2}$ —8 millim. longi, tibia eorum c.a  $1\frac{2}{3}$  millim.

*Cephalothorax*, *sternum* et *mandibulae* obscure ferrugineo-fusca, *palpi* et *pedes* paullo pallidiores, ferrugineo- vel luteo-fusci. *Abdomen* fusco-cinereum.

Duo exempla mascula sub lapidibus ad Nicæam inventa. Cum iis feminam cepi, quam antea (On Eur. Spid., p. 157) ad eandem speciem referendam esse credidi; quum vero pedibus aculeatis, cephalothorace subtilissime tantum ruguloso, cet.; differt, certe propria est species, quam *D. lævigatam* appellare volo. De qua hæc afferre liceat:

*Dysdera lævigata* N. — Fem. — Long. corporis fere 7 millim. *Cephalothorax*  $2\frac{3}{4}$  millim. longus, 2 millim. latus, modice convexus, impressionibus cephalicis versus latera evidentibus, punctis impressis manifestis nullis, subtilissime tantum rugulosus; regione oculorum sub-pilosa, clypeo parum plus 1 millim. lato. *Sternum* subtilissime rugulosum. *Oculi* antici reliquis majores, rotundi, inter se spatio distantes, quod dimidiam eorum diametrum vix vel non æquat, cum lateralibus

mandibles are  $1\frac{1}{2}$ , the 1:st pair of legs 9, their tibia 2 millim. in length. In the female the length of the cephalothorax is  $3\frac{1}{4}$ , its breadth  $2\frac{1}{2}$  millim., the mandibles  $1\frac{1}{2}$ , the 1:st pair of legs  $8\frac{3}{4}$ , their tibia 2 millim. in length, and the 4:th pair of legs very nearly as long as the first. The cephalothorax is of a blackish brown or dark brownish red colour, and, like the sternum, rather densely covered with large depressed points. The two anterior eyes are considerably larger than the others; all are posited very close to each other, except the anterior eyes, which in the male are separated by a space almost as great as the eyes' diameter; in the female this space is scarcely as large as half the diameter of an eye. The maxillæ are somewhat inclined in the labium. The legs are brownish red, destitute of spines. The bulbus genitalis of the male is very characteristic: it is of a pale brownish yellow colour, short and irregularly pear-shaped, broader towards the apex, *without* a distinct "shaft" (conf. sup., p. 467), strongly and transversely depressed on the anterior side from about the middle to the apex: this depression is above limited by a transverse, strong, blackish brown protuberance or callus; the apex exhibits three large processes, of which the exterior is short, curved outwards, and blunt at the extremity; the middle process is very long and slender (about  $\frac{3}{4}$  of the length of the bulbus), blackish brown, and has the form of a spine curved equably forwards and, in the compressed extremity, cloven into two teeth, the anterior of which is narrower and much longer than the posterior; the third (innermost) process is broader than the others, considerably shorter than the middle process, compressed, tapering towards the apex, where it bears a fine bristle.

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oblongis contingentes; postici reliquis minores, fere contingentes, a lateralibus spatio parvo disjuncti. *Mandibulæ* fere perpendiculares, 1 millim. longæ, quam tibia 1:mi paris evidenter breviores. *Maxillæ* magnæ, omnino parallelæ, non in labium inclinatæ. *Pedum* 4 posteriorum tibiæ et metatarsi aculeis sat multis undique armati; femora 1:mi et 2:di parium aculeos 2—3 versus apicem lateris anterioris ostendunt, 3:tii paris femora aculeum parvum ad basin supra habent(?); 4:ti quoque paris aculeis in latere superiore versus basin armata sunt. Pedes 1:mi paris  $7\frac{1}{2}$  millim. longi, tibia eorum c:a  $1\frac{2}{3}$  millim.

*Cephalothorax* et *mandibulæ* obscurius, *sternum*, *maxillæ*, *labium*, *palpi* et pedes clarius fusco-lurida. *Abdomen* flavescenti-cinereum. Vulva ex foveis duabus obscuris, formâ fere punctorum, inter se longe distantibus constare videtur; ab utraque fovea excurrit linea brevis, fusca, oblique anteriora versus et intus directa.

Unicam, ut supra dixi, feminam ad Nicæam inveni.

Prof. CANESTRINI has favoured me with a ♂ and ♀ of still another species, from Italy, under the name of *D. punctata*: for this species I propose the name *D. Pavesii*<sup>1)</sup>.

1) *Dysdera Pavesii* N. cephalothorace cum sterno punctis magnis sat raris undique impresso, clypei latitudine  $\frac{2}{3}$  maximæ cephalothoracis latitudinis æquanti, oculis anticis inter se spatio diindia oculi diametro multo majore remotis, pedibus non aculeatis; bulbo maris scapo brevi birami, ramis angulum sub-rectum inter se formantibus. — ♂ ♀ ad. Long. ♂ c:a 7, ♀ c:a  $8\frac{1}{2}$  millim.

*Mas.* — *Cephalothorax* brevis, fortiter convexus, impressionibus cephalicis ad margines tantum perspicuis,  $3\frac{1}{2}$  millim. longus, 3 latus, clypei latitudine pæne 2 millim. æquanti. *Sternum* nitidum, punctis magnis raris impressis sparsum. *Oculi* anticæ inter se spatio distantes, quod diametrum eorum non æquat, dimidiam vero diametrum multo superat; reliqui oculi inter se valde appropinquantes, laterales cum anticis, ut et duo postici fere, contingentes; lateralium diameter maxima parum brevior quam anticorum, postici reliquis evidenter minores. *Mandibulæ* sat parvæ,  $1\frac{3}{4}$  millim. longæ, ideoque clypei latitudine paullo breviores, tibiis anticis etiam breviores, nitidæ, non transverse striatæ. *Bulbus genitalis* ex parte superiore brevi et scapo bifido constat: pars superior fere inverse et breviter ovata, pallida, vittis transversis 2—3 fuscioribus, parum sinuatis; scapus brevis, latus, compressus, oblique deorsum et foras directus: pars ejus basalis parum longior (intus) quam latior ad basin, ibique fere æque lata ac bulbi pars superior, a qua extus sinu profundo dividitur; latus ejus interius, longius, fere rectum, ubi in bulbi partem superiorem transit, angulum prominentem format; apice in duos ramos inæquales divisa est, quorum margines inferiores inter se angulum primo fere rectum vel paullo obtusum formant; ramus exterior formam dentis fortis sub-trianguli, complanati, foras directi, paullo sursum curvati præbet; ramus interior, retro et intus directus, longior est, basi angustus, versus apicem gradatim dilatatus ibique æque latus atque longus: apex hujus rami in medio late et parum profunde incisus vel emarginatus duos lobos vel dentes obtusos sub-triangulos format. In apice exterioris (majoris) horum dentium duo pili vel setæ graciles adesse videntur. A basi rami interioris, secundum latus ejus antè et interius, spina ipsum ramum longitudine æquans et cum eo fere parallela excurrit: hæc spina, quæ ad basin valde lata et compressa est et in apicem longum et tenuem exit, versus ipsum ramum curvata est. *Pedes* 1:mi paris  $9\frac{1}{3}$ , tibia eorum 2 millim.; omnes aculeis carent.

*Cephalothorax* obscure fusco-ferrugineus, *mandibulæ* paullo clariores; *sternum*, *maxillæ*, *labium* testaceo-ferruginea. *Palpi* et *pedes* pallide fusco-rufescentes. *Abdomen* olivaceo-cinereum, pallido-sub-reticulatum.

*Femina* mari fere omnibus numeris, palpis exceptis, similis: long. cephalothoracis  $3\frac{1}{2}$ , lat. ejus 3 millim., clypeus fere 2 millim. latus; *mandibulæ*  $1\frac{1}{2}$  millim. longæ. *Maxillæ* in labium paullo inclinatæ (ut in ♂). *Pedes* 1:mi paris  $9\frac{3}{4}$ , tibia eorum  $2\frac{1}{3}$  millim. *Vulva* ex duabus foveis parum manifestis, parum infuscatis, inter se longe distantibus constare videtur.

Patria: Italia. Marem et feminam benigne mecum communicavit Cel. Prof. CANESTRINI.

Pag. 155. *Tegenaria domestica* WESTR. — Add to the synonyms:

1871. PHILÆCA DOMESTICA MENGE, Preuss. Spinn., IV, p. 274, Pl. 50, tab. 160.

Pag. 157, 480. *Tegenaria civilis* WESTR., BLACKW. --- Add to the synonyms:

1871. TEGENARIA CIVILIS MENGE, Preuss. Spinn., IV, p. 267, Pl. 50, tab. 158; Pl. 53, tab. 158 a.

Pag. 159, 479. *Agelena labyrinthica* WESTR., BLACKW. — Add to the synonyms:

1871. AGALENA LABYRINTHICA MENGE, Preuss. Spinn., IV, p. 279, Pl. 51, tab. 163.

Pag. 160, 481. *Textrix lycosina* WESTR., BLACKW. — Add to the synonyms:

1871. TEXTRIX LYCOSINA MENGE, Preuss. Spinn., IV, p. 277, Pl. 51, tab. 162; Pl. 53, tab. 162 a.

Pag. 162. *Agræca linotina* WESTR.; p. 480. *Agelena brunnea* BLACKW. — The spider which MENGE<sup>1)</sup> calls *Agalena brunnea*, and to which he refers *A. brunnea* BLACKW., is quite a different species, and does not even belong to *Agræca* WESTR., but is a genuine *Agalena* (WALCK.), THOR. It is perhaps identical with the to me unknown *Agalena gracilens* C. KOCH<sup>2)</sup>, which MENGE also cites, unless this latter should be the same as *A. similis* KEYSERL., as I have above, p. 160, surmised. — The cocoons which MENGE loc. cit. describes and figures as belonging to his *Agal. brunnea*, have most certainly not been fabricated by that spider, but belong to an *Agræca*, and probably either to *A. brunnea* (BLACKW.) or to *A. Haglundii* THOR. — The 'English species' of *Agræca* mentioned by me, p. 163, as different both from *A. brunnea* and *A. Haglundii*, is = *Agr. (Agel.) proxima* (CAMER.) 1871 (Descr. of some Brit. Spid., etc., in Transact. of the Linn. Soc., XXVII, p. 415, Pl. 54, no. 13).

MENGE is of opinion, that we ought to write *bruneus* and not *brunneus*, because this word is derived from "the old high-German *prun*, Anglos. *brun* and the root *brinan*". But as the word occurs in, one may say, innumerable zoologicals works under the form *brunneus*, and has under that special form gained an acknowledged place in the language of Natural History — (whence it of course ought in strict accuracy, together with the equally unclassical word

1) Preuss. Spinn., IV, p. 285, Pl. 52, tab. 165.

2) Die Arachn., VIII, p. 59, Tab, CCLXIX, fig. 635.

*griseus*, to be altogether banished) — it is hardly worth while to make any alteration in the universally received orthography<sup>1)</sup>. As regards names whether generic or trivial derived from the *classical* languages, it is no doubt quite right to alter or reject, as MENGE does, the barbarous forms which now so often disgrace the nomenclature of zoology. In the Arachnological department this process presents no serious difficulties, for this branch of zoology having fortunately not yet become such an arena for dilettanteism as sundry others, it is not in this case to be feared, that the wounded vanity of a swarm of conceited and ignorant people will utter so vehement a yell as we have in some other cases heard arise from a similar cause. Most of the arachnological writers, who have occasionally been guilty of carelessness in the choice of their nomenclature, would undoubtedly receive willingly any proposed corrections resting upon reasonable grounds. We have, f. inst., surely a right to expect, as long as *Latin* is the received language of scientific nomenclature, that that language be not handled in a manner, in which we should not bear to see a *living* language treated, if names were to be selected from such language. If for example English were the language of nomenclature, would one tolerate such names as "*Blackâtre Field-araignée*", or "*Yell-striped Uaina-spider*"? Should we not reject the former name altogether, and alter the latter to "*Yellow-striped Hyena-spider*", supposing this to be what the name-giver meant to express? But such appellations as e. g. *Hippocorvus flavoides* or *Upogochos* (instead of *Hyponchus*) *pallipennis*, the like of which are now often suffered to pass unchallenged, are in no respect better than the examples given above. — Conf. On Eur. Spid., p. 12—14.

Pag. 168. *Zora spinimana* WESTR.; pag. 472. *Hecaerge spinimana* BLACKW. — On *Dolomedes spinimanus* DUF., see above, p. 534.

Pag. 170. *Micaria fulgens* WESTR. — Add to the synonyms:

1872. *MICARIA FULGENS* MENGE, Preuss. Spinn., V, p. 321, Pl. 57, tab. 184.

Pag. 171. *Chubiona formicaria* SUND. has been described and figured by MENGE loc. cit., p. 323, Pl. 57, tab. 185, under the name of *Micaria formicaria*.

Pag. 173. *Micaria pulicaria* WESTR.; pag. 477. *Drassus micans* BLACKW.; *D. nitens* ID. — Add to the synonyms:

1872. *MICARIA PULICARIA* MENGE, Preuss. Spinn., V, p. 325, Pl. 57, tab. 186.

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1) *Brunus* (brown) appears to be common in the Latin of the Middle Ages. For *bruneus* or *brunneus* I know of no authority.



Pag. 174. *Micaria guttulata* (C. KOCH). — This spider is not, as I have thought probable, a variety of *M. pulicaria* (SUND.), but is a separate species: see L. KOCH, Beitr. z. Kenntn. d. Arachn.-fauna Tirols, 2:te Abhandl., p. 316.

Pag. 191. *Pythonissa femoralis* WESTR. — Add to the synonyms:

1850. PYTHONISSA BICOLOR C. KOCH, Uebers. d. Arachn.-Syst., 5, p. 28.

1872. GNAPHOSA BICOLOR MENGE, Preuss. Spinn., V, p. 301, Pl. 54, tab. 173.

Pag. 194. *Melanophora* (C. KOCH). — The name of this genus must be altered into *Prosthesima* L. KOCH: see above, p. 430.

Pag. 194. *Melanophora Petiverii* (SCOP.); pag. 477. *Drassus ater* BLACKW. — Add to the synonyms:

1872. MELANOPHORA PETIVERII MENGE, Preuss. Spinn., V, p. 305, Pl. 55, tab. 175.

1873. PROSTHESIMA PETIVERII THOR., Rem. on Syn., p. 411.

Pag. 194. *Melanophora petrensis* C. KOCH. — Add to the synonyms:

?1872. MELANOPHORA PETRENSIS MENGE, Preuss. Spinn., V, p. 308, Pl. 55, tab. 177.

1873. PROSTHESIMA PETRENSIS THOR., Rem. on Syn., p. 411.

Pag. 199. *Melanophora pusilla* WESTR.; pag. 477. *Drassus pusillus* BLACKW. — Add to the synonyms:

1872. MELANOPHORA NIGRITA MENGE, Preuss. Spinn., V, p. 311, Pl. 56, tab. 179.

1873. PROSTHESIMA NIGRITA THOR., Rem. on Syn., p. 411.

Pag. 199. *Melanophora nocturna* WESTR. — *Pythonissa comata* OHL., and probably also *Drassus nocturnus* WALCK., should be effaced from the synonyms of this species. *P. comata* OHL. is by MENGE (loc. cit., V, p. 314, Pl. 56, tab. 181) called *Melanophora nocturna*; for MENGE thinks that that species, and not *Pythonissa maculata* C. KOCH or *M. nocturna* WESTR. (*Gnaphosa nocturna* THOR.), is the true *Aran. nocturna* of LINNÆUS. If this *Pyth.* or *Prosthesima* (?) *comata* (OHL.) had ever been, since LINNÆUS' time, captured in Sweden, I should not have hesitated to adopt the Linnæan specific name *nocturna* for it; but as this is not the case, and it is very uncertain whether the species occurs in Sweden, I think it is best for the present to let it keep the name under which it is described by OHLERT, and to retain for *Pyth. maculata* C. KOCH the name *nocturna* (LINN.), under which the Scandinavian arachnologists, from STRÖM

down to WESTRING, have described it. — To the synonyms of *M. nocturna* WESTR. may be added:

1872. GNAPHOSA MACULATA MENGE, Preuss. Spinn., V, p. 317, Pl. 56, tab. 182.

Pag. 203, 478. *Argyroneta aquatica* WESTR., BLACKW. — Add to the synonyms:

1761. ARANEA URINATORIA PODA, Ins. Mus. Græc., p. 123.  
1776. „ AMPHIBIA MÜLL., Zool. Dan. Prodr., p. 194.  
1871. ARGYRONETA AQUATICA MENGE, Preuss. Spinn., IV, p. 294, Pl. 53, tab. 170.

Pag. 204. *Amaurobius ferox* WESTR.; pag. 479. *Ciniflo ferox* BLACKW. — Add to the synonyms:

1871. AMAUROBIUS FEROX MENGE, Preuss. Spinn., IV, p. 289, Pl. 55, tab. 167.

Pag. 205. *Amaurobius atrox* WESTR.; pag. 479. *Ciniflo atrox* BLACKW. — Add to the synonyms:

1871. AMAUROBIUS FENESTRALIS MENGE, Preuss. Spinn., IV, p. 290, Pl. 55, tab. 168.

Pag. 228. *Sparassus ornatus* WESTR. — I have lately had an opportunity of examining two adult males of *Micrommata ornata*, and have not been able to detect any differences of form, not even in the sexual organs, from *M. virescens* (CLERCK) or *Sparassus smaragdulus* BLACKW.; I am therefore very much inclined to consider this spider as a variety only of *M. virescens*. CAMBRIDGE<sup>1)</sup> is of the same opinion.

Pag. 230. *Thomisus lanio* WESTR. — Add to the synonyms:

1871. THOMISUS CAMBRIDGII CAMBR., Descr. of some Brit. Spid., etc., p. 406, Pl. 54, no. 9, a, e, f, g (= ♂).

Prof. WAHLGREN has lately sent me males and females of *Th. lanio* WESTR. or *Xyst. impavidus* THOR. captured at the same locality in Skåne, so that I cannot have the least doubt about *Th. lanio* WESTR. being the female of *X. impavidus*. One male and one female specimen I have transmitted to Mr CAMBRIDGE, who has confirmed my opinion that the male is = the male described by him loc. cit. under the name of *Thom. Cambridgii* ♂ (see above, p. 425); but the female is not identical with the true *Thom. Cambridgii* BLACKW., of which therefore the male is as yet unknown. — Mr CAMBRIDGE tells me that *Th. lanio* WESTR. or *X. impavidus* ♀ is quite distinct in colours etc. from the type (♀) of *Th. Cambridgii*, besides being much

1) Gen. list of the Spid. of Palestine and Syria, p. 312.

larger, and that the figure of *Th. Cambridgii* in 'Spid. of Gr. Brit. and Ireland' is very badly coloured, and gives no idea of the spider at all.

Pag. 234, 475. *Thomisus bifasciatus* WESTR., BLACKW. — Add to the synonyms:

1871. THOMISUS BIFASCIATUS CAMBR., Descr. of some Brit. Spid., *cet.*, p. 408, Pl. 54, no. 9, *b, c, d*.

Pag. 236, 474. *Thomisus cristatus* WESTR., BLACKW. — P. 236, instead of "*Xyst. cristatus* . . .", read: = *Xysticus cristatus* (CLERCK) 1757 + *Xysticus pini* (HAHN) 1831. — Under *Thom. cristatus* WESTR. two distinct species, *Th. cristatus* BLACKW. and *Th. pini* HAHN or *Th. audax* BLACKW. are confounded: to the former the synonyms belong, which are taken up under 'Var.  $\alpha$  (*Forma principalis*)', with exception of *Xysticus mordax* C. KOCH, and *X. audax* *id. ad part.* (loc. cit., figg. 1007, 1008), which, together with the synonyms given under 'Var.  $\beta$ , *pini*', belong to *Th. pini* HAHN: *vid. sup.*, p. 424.

Pag. 245. *Thomisus cinereus* WESTR.; pag. 474. *Th. audax* BLACKW. — P. 245, instead of "*Xyst. cristatus* (CLERCK) ♀, Var.", read: = *Xysticus pini* (HAHN) ♀. — See above, p. 424.

Pag. 252. *Thomisus horticola* WESTR.; pag. 426. *Th. pallidus* BLACKW. — Add to the synonyms, p. 252:

1846. THOMISUS PALLIDUS BLACKW., Descr. of some newly disc. spec., *cet.*, in Ann. and Mag. of Nat. Hist., XVIII, p. 299.  
 1861. " " ID., Spid. of Gr. Brit., I, p. 82, Pl. IV, fig. 48.  
 1871. " " CAMBR., Descr. of some Brit. Spid., *cet.*, p. 408, Pl. 54, no. 10.

Pag. 254. *Thomisus brevipes* WESTR. — Instead of "*Xysticus brevipes* (HAHN) 1831", read: = *Xysticus Westringii* N. + *Xysticus praticola* C. KOCH 1837.

L. KOCH, as I find from specimens with which he has favoured me, considers *Xyst. praticola* C. KOCH as identical with *Thom. incertus* BLACKW.; and although this species and *Thom. brevipes* WESTR., to which I have p. 254 referred *X. praticola* C. KOCH, are so similar to each other, that they have probably not been distinguished by C. KOCH, I nevertheless, after a renewed study of C. KOCH's descriptions and figures, think, that *Th. incertus* BLACKW. is the species, which ought to bear KOCH's specific name *praticola*: it appears for example from C. KOCH's figure of the male, that the thighs of the 2nd pair have two spines, which is not the case in *Th. brevipes*

WESTR. ♂. The females which I have received from L. KOCH and CAMBRIDGE as belonging to "*X. praticola*" and "*Th. incertus*", agree however so fully, not only with the Swedish, Finnish and German specimens which I have looked upon as females to WESTRING'S *Th. brevipes* ♂, but also with females that I have received from OHLEBT as belonging to his *X. praticola* ♂ (= *Th. brevipes* WESTR. ♂), as also with a specimen of "*Th. brevipes* WESTR. ♀", lately sent to me by WESTRING himself, that I am quite unable to distinguish them; and it therefore appears to me probable, that neither WESTRING, OHLEBT or I have seen the real female to *Th. brevipes* WESTR. ♂, or *X. Westringii*, as I now call that spider. The males of the two species are easily distinguished from each other by the entirely different form of the outer process of the tibial joint etc., as has been shown above, p. 255. That an adult male of "*Th. incertus*" has been found in Sweden (in Bohuslän), I have already mentioned (p. 427).

But *Th. brevipes* HAHN also appears to be a different species from *Th. brevipes* WESTR. (♂). Dr L. KOCH has in fact sent me from Nürnberg specimens of both sexes of a *Xysticus*, which he considers to be HAHN'S *Th. brevipes*, and the male of which is different as well from *X. praticola* or *incertus* and from *Th. brevipes* WESTR. or *X. Westringii*, as from the male which I, p. 256, described under the name of *X. pusio*: the female of my *X. pusio* on the contrary belongs to the species denominated by L. KOCH *X. brevipes* (HAHN), and the real female of *X. pusio* is therefore as yet unknown. As the females of these species stand in close relationship to each other, and it is probably not possible to determine with certainty, to which *Th. brevipes* HAHN (a ♀) ought in accuracy to be referred, it may seem a matter of indifference, to which of them HAHN'S specific name be assigned. But as HAHN'S *Th. brevipes* was found at Nürnberg, and Dr KOCH — who resides in that city and has for a long series of years made the spiders met with there his study — considers my *X. pusio* ♀ as the real *Th. brevipes* HAHN, it seems best to accept his determination of the species as binding. — To what species *Th. brevipes* WALCK. is to be aggregated, it can hardly be possible to say; *Th. brevipes* BLACKW. is perhaps nothing else than young specimens of *Xyst. luctuosus* (BLACKW.): see above, p. 427.

In a ♂ of the species which I now, with L. KOCH, call *X. brevipes* (HAHN), the cephalothorax is 1½ millim. long, shagreened with closely situated punctures, dark brown, with bright, yellowish, radiating lines on the sides and pars cephalica; it has a pale middle

band, which dilates upon the dark-spotted pars cephalica; the sides are marbled with pale spots, the larger ones forming a row above the margin. Between the four centre eyes are a few bristles pointing forwards, which are *somewhat club-shaped*; the bristles on the clypeus are longer, but are scarcely anything thicker towards the apex. The extremity of the tibial joint of the palpus is on the outer side, above, drawn out into a long, *stout*, almost  $\sim$ -shaped, pointed spine, which at the base is directed forwards, but afterwards curved downwards and a little outwards, with the apex curved slightly inwards and upwards. The process at the extremity of the under side of the tibial joint is slender, somewhat tapering at the apex, almost straight. When seen in profile, the bulbus, on the under side, towards the base, presents two downward-pointing teeth situated close together, of which the anterior (the longer) is blunt, the posterior pointed. The abdomen is thinly sprinkled with short, pale, visibly clublike bristles. The legs are brownish yellow, the thighs of the 1:st pair black; those of the succeeding pairs have a broad black ring at the base; the patellæ are at the base a little marked with dark brown spots; the tibiæ have a broad black ring at the base, and are (at least the fore tibiæ are) also marked with black spots at the apex; the hind metatarsi are black at the base. The legs are clothed with fine hairs; they have a little short upright spine on the upper part of the tibiæ; the anterior thighs seem not to have more than *two* spines, the posterior only *one*. As in *X. praticola*, the tibiæ of the 1:st pair have on the under side, besides the two pairs of strong spines, two or three fine, short spines at the apex.

The female is, as has already been mentioned (vid. '*X. pusio* ♀', pp. 256, 257) very like *X. praticola* ♀, and difficult to distinguish from that spider by any other mark than its smaller dimensions and the somewhat different lateral profile of the cephalothorax. It is however darker: the sternum for example is black with whitish spots, and the thighs of the 1:st pair blackish brown with similar spots, whereas in *X. praticola* ♀ the sternum and the thighs of the 1:st pair are brownish yellow with dark spots. The club-like bristles seen on the abdomen of *X. praticola* are in *X. brevipes* extremely short and mixed with others still shorter, which are scarcely thickened at all the apex. — The true *X. brevipes* (HAHN) also has been met with in Sweden; I have seen one specimen from Skåne, captured by Mr ROTH, of Lund.

In *X. praticola* ♂ the inferior process of the tibial joint is directed forwards, somewhat *dilated* and *curved upwards* at the apex, in *X. pusio* ♂ it is directed forwards and downwards, its apex is *straight* and is *not* dilated. (In *X. Westringii* the process points downwards and forwards and is *slightly curved downwards* at the apex). The spine, into which the outer side of the tibial joint is produced, is in *X. praticola* ♂ directed *downwards* and forwards, and is tolerably powerful, curved at the apex and base somewhat spirally or so as to form almost a ~; in *X. pusio* this spine is directed *forwards* (hardly at all downwards), parallel with the margin of the lamina, and is *fine, almost straight*, scarcely sensibly ~-shaped. (In *X. brevipes* the ~-shaped spine is shorter and stouter, stouter than the inferior process: in *X. Westringii* the spine is C-shaped and the outer side of the tibial joint much dilated and thickened).

The vulva in *X. praticola* appears, when the animal is examined lying in a fluid, to consist of a transverse pale area, bounded by two fine, dark, C-shaped costæ uniformly curved towards each other: in the anterior portion of this area are seen two small dark spots. When the animal is examined dry, it appears that the anterior portion of the vulva encloses two rounded excavations, bounded internally and posteriorly by the anterior extremity of the afore-said C-shaped costæ, which extremity is drawn out backwards; externally and posteriorly they are bounded each by a separate C-shaped, low, broad and shining elevation; each of these excavations encloses one of the dark depressed spots; between them a fine elevated line extends backwards.

The synonyms of the species here treated of must of course be disposed in a manner quite different from that, in which we have exhibited them pp. 254, 255. For *Th. brevipes* WESTR., Aran. Suec., p. 438 (= *Xysticus Westringii* N. + *X. praticola* C. KOCH 1837), they take the following form:

"Mas" (*X. Westringii*):

- Syn.: †1851. THOMISUS BREVIPES WESTR., Förteckn., cet., p. 50 (salt. ad part.).  
 †1867. XYSTICUS PRATICOLA OHL., Aran. d. Prov. Preuss., p. 117 (salt. ♂ ad part.).  
 1872. " BREVIPES THOR., Rem. on Syn., p. 254 (ad part., salt. ♂).  
 1873. " WESTRINGII ID., ibid., pp. 412, 427.

"Femina" salt. ad part. (*X. praticola*):

- Syn.: 1851. THOMISUS INCERTUS BLACKW., Spid. of Gr. Brit., I, p. 86, Pl. IV, fig. 51.  
 †1855. XYSTICUS BREVIPES THOR., Rec. crit. Aran., p. 111 (= ♀).  
*Cet. Syn. vid. sup., pp. 426, 427.*

For *X. brevipes* (HAHN) 1831 and *X. pusio* THOR. 1872 the synonyms are as follows:

*X. brevipes* (HAHN):

- Syn.: ?182.. THOMISUS BREVIPES HAHN, Monogr. Aran., 4, Tab. III, fig. C.  
 1831. " " ID., Die Arachn., I, p. 30, Tab. VIII, fig. 25.  
 1837. XYSTICUS " C. KOCH, Uebers. d. Arachn.-Syst., 1, p. 25.  
 1872. " PUSIO THOR., Rem. on Syn., p. 256 (*ad part.*: ♀; non ♂).

*X. pusio* THOR.:

- Syn.: 1872. XYSTICUS PUSIO THOR., Rem. on Syn., p. 256 (*ad part.*: ♂; non ♀).

Pag. 258. *Thomisus vaticus* WESTR.; pag. 476. *Th. citreus* BLACKW. — Add to synonyms:

1805. ARANEA ANNULATA PANZ., Faun. Ins. Germ., 86, 22.

Pag. 259. *Thomisus horridus* WESTR. — In the male the patellar joint of the palpus is but little longer than it is broad, rounded in front; the tibial joint is very short, broader towards the apex, at the inner edge much shorter than it is broad at the base; the outer side is somewhat drawn out forward, about double as long as the inner; the apex of that side is continued in the form of a strong, reddish or rust-coloured process directed forwards and slightly outwards, which reaches about to the middle of the lamina, and carries in the midst of its outer side an outward-pointing, stout, compressed and, on the under side, angularly dilated tooth of the same colour; beneath, on the outer side, the tibial joint bears a pretty short and stout, blunt, forward- and downward-pointing and slightly upward-curved process. The under side of the bulbus is formed for the most part of a flat, almost plane lamina; at the apex, on the outer side, it runs out into a process abruptly folded backward, compressed, directed backwards and outwards and tapering towards the apex. The vulva consists of a little fovea, which is bounded in front by a stout, yellowish callus emarginated at the hinder border.

Pag. 259, 475. *Philodromus* (WALCK.). — A spider of this genus, which I have not found described by any other writer than SCHRANCK, is *Ph. emarginatus* (SCHRANCK) 1803<sup>1)</sup>, and a few words on this species may therefore not be out of place here. It is easily recognized by the abdomen being in the midst of the anterior margin visibly incised, or deeply, but not broadly, emarginated. The cephalothorax,

1) *Aran. emarginata* SCHRANCK, Fauna Boica, III, 1, p. 230.

which is clothed with whitish down and sprinkled with brown hairs, is at the bottom brown,—speckled with whitish grey; the pars cephalica is, behind, in the form of a thick V, whitish grey, in front of the same colour, but with some longitudinal brown lines, of which the two middlemost are longest; the greatest part of the eye-area and clypeus are whitish grey; the brown pars thoracica has on each side four whitish grey radii and has on the margin a broad line of whitish grey and brown marbling. The lateral eyes are as far from each other as the anterior from the posterior centre eyes. The legs and palpi are yellowish brown, most of the leg-joints being somewhat darkened at the apex, and the tibiæ and metatarsi also darker at the base. The anterior tibiæ have on the under side three pairs of spines. The abdomen is clothed with whitish grey hair and thinly sprinkled with long brown hairs: it is dark grey above with paler points and spots especially towards the sides and behind; the anterior margin is also of a paler colour. The belly is paler grey, with dark spots towards the sides: along the middle it has three dark, more or less distinct bands, situated close together, and converging towards the anus, bordered by four rows of small depressed points. The vulva consists of a little black area, bordered in the sides by two elevated narrow costæ, and which in the middle, behind, exhibits a septum emitting in front two rapidly divergent, long, narrow costæ. In one female I find the legs of the 1:st pair about 9, those of the 2:nd pair 11 millim. long; the 3:rd and 4:th pairs are of equal length,  $8\frac{1}{3}$  millim.; the cephalothorax 3, the whole body about 6 millim. long. In the *male* the 3:rd pair of legs seems to be a trifle longer than the 4:th. The patellar joint of the palpus in ♂ is as broad as the femoral joint, rapidly tapering at the apex, half as long again as it is broad at the base; the tibial joint is considerably slenderer than, but as long as the patellar joint, double as long as it is broad; its outer side is at the apex drawn out into a very strong, forward-directed process, the extremity of which is, by a small upward-curved incision, divided into two lobes, the upper narrow, spine-like, black and slightly curved upwards, the lower much broader, truncated at the apex, and pale-coloured. — I have received two females and a male of this species, taken in the neighbourhood of Vienna, of Dr REDTENBACHER.

*Aranea emarginata* WALCK., Faune Par., II, p. 230 (= *Thomisus emarginatus* ID., Faune Franç., Arachn., p. 74; H. N. d. Ins. Apt.,



I, p. 512)<sup>1)</sup> is probably quite a different species from *Ar. emarginata* SCHRANCK, as WALCKENAER, even in his Ins. Apt., refers it to the genus *Thomisus*.

Pag. 268. *Philodromus griseus* WESTR. — The spider figured by GUÉRIN-MÈNEVILLE in his Iconogr. du Règne Anim., Arachn., Pl. 2, fig. 9, under the name of *Philodromus pallidus* WALCK., is a species totally different from *Ph. griseus* WESTR.; it is not an *Artanes*, as this latter, but probable belongs to the genus *Thanatus* C. KOCH.

Pag. 269. *Philodromus margaritatus* WESTR.; p. 476. *Ph. pallidus* BLACKW. — Mr BLACKWALL, to whom I had sent a female specimen of *Ph. margaritatus* WESTR. and another of *Ph. griseus* ID., has confirmed the statement given above (pp. 263, 269), that the former and not the latter species is identical with his *Ph. pallidus*.

Pag. 269, 270. *Philodromus formicinus* WESTR. — According to CAMBRIDGE<sup>2)</sup>, not only *Philodr. Albini* SAV. et AUD., but also *Thomisus Fabricii* ID., is a different species from *Thanatus formicinus*; *Th. Fabricii* ought therefore to be effaced from the synonyms of *Ph. formicinus* WESTR.

Pag. 273. *Lycosa lapponica* THOR. — In the description of the female of *L. lapponica*, p. 273, two different species have been confounded; the female specimen from Finnland, which is there mentioned, and which is distinguished by the bands on the cephalothorax being densely covered with whitish or greyish hair, as also by a grey spear-shaped or lanceolate spot edged with black on the back of the abdomen, in front, and two rows of grey spots behind this, is the true *L. lapponica* ♀, whereas the female specimen from Karesuando, referred by me to the same species, and from which the description of the vulva is taken, is a new species, of which I have lately received some specimens from the northwestern parts of Herjedalen; it may be called *L. atrata*<sup>3)</sup>.

1) "*Th. marginatus*" here is evidently an error of the press for *Th. emarginatus*. — *Th. marginatus* WALCK. is described in H. N. d. Ins. Apt., I, p. 503.

2) Gen. list of the Spid. of Palestine and Syria, p. 310.

3) The two species in question may be distinguished by the following descriptions:

*Lycosa lapponica* THOR. nigro-fusca, cephalothoracis vittis tribus longitudinalibus sub-testaceis, continuis, dense albicanti- vel cinereo-pilosis, media antice abbreviata; pedibus ferrugineis, femoribus supra aut fusco-sub-maculatis, aut obscurioribus, macula apicali et basali oblonga clariori, linea nigricanti longitudinali

Pag. 278. *Lycosa arenaria* WESTR.; pag. 472. *L. fluviatilis* BLACKW. — The Rev. O. P. CAMBRIDGE has sent me the type-specimens of *L. fluviatilis* BLACKW.: they belong to a darker variety of *L. are-*

persecta; abdomine supra cinereo, macula antica sub-hastata dense cinereo-pilosa, nigro-limbata; vulva magna, inverse sub-ovata vel cordi-formi, septo oblongo lato, plano, antice breviter acuminato instructa; bulbo genitali spina longa obliqua, ad basin sub-geniculata, apice paullo recurvo et acuminato ad marginem laminae pertinenti, aliaque spina minore transversa inter bulbum et illam, denteque in medio marginis exterioris armato. — ♂ ♀ *ad.* — Long. c:a 7–8 millim.

*Syn.*: 1872. LYCOSA LAPPONICA THOR., Rem. on Syn., p. 273 (♂, et ♀ *ad part.*).

*Femina.* — *Cephalothorax* c:a 4 millim. longus,  $2\frac{4}{5}$  millim. latus, nigro-fuscus, vittis tribus longitudinalibus clarioribus continuis, lateralibus praesertim valde distincte et dense cinereo- vel albicanti-pilosis, media antice abbreviata, vix vel parum in partem cephalicam continuata, sulco ordinario fusco geminata. *Sternum* sub-ferrugineum. *Mandibulae* piceo-ferrugineae. *Palpi* ferruginei. *Pedes* quoque ferruginei, femoribus supra obscurius sub-maculatis, dense luteo- vel testaceo-pubescentes et nigro-pilosi. *Pedes* 1:mi paris c:a 11, 4:ti c:a 15 millim.; *patella* + *tibia* 4:ti paris  $4\frac{1}{2}$  millim. *Tibiae* anticae subter inter basin et medium paribus 2 aculeorum longorum et tenuium armati; par tertium magis versus apicem, paullo altius, in lateribus tibiae, situm est, par quartum, brevius, in ipso apice, subter. *Abdomen* nigro-fuscum, supra dense cinereo-pilosum et, versus latera, -sub-variatur; in dorso adest antice macula sub-hastata, laete cinerea, nigro-marginata, et pone eam ordines duae appropinquantes et ad anum coeuntes macularum majorum ejusdem coloris. *Vulva* ex area sat magna, profunde impressa, antice angustiore, parum longiore quam latiore constat: in lateribus posteriora versus rotundato-dilatata est, fere inverse ovata vel cordi-formis, septo medio magno, oblongo, lato, sub-plano, antice breviter acuminato, posteriora versus paullo latiore et postice tuberculo parvo utrinque instructo.

*Mas.* — Ejus descriptionem vid. sup., p. 274. — Exemplum duo ex Laponia, in spiritu vini asservata, alterum (masculum) ex Karesuando, alterum (femineum) ex Enare possideo.

*Lycosa atrata* n. nigra vel nigro-fusca, cephalothorace vittis tribus longitudinalibus sub-testaceis, luteo-pilosis, lateralibus anteriora versus plerumque bis abruptis (in ♂ plus minus obsoletis), media antice abbreviata, ad partem cephalicam tantum pertinenti; pedibus ad maximam partem piceo-ferrugineis, femoribus saltem supra luteo-maculatis; abdomine nigro, supra vitta antica abbreviata sub-testacea luteo-pilosa, serieque postica utrinque ex punctis albicantibus formata notato; vulva ex fovea formata maxima, antice et postice sub-rectangula, postice truncata, septo medio longo, posteriora versus inaequaliter latiore persecta; bulbo genitali ad basin procursu brevi, fortissimo, fere semi-lunato, foras et paullo anteriora versus directo, non ad marginem laminae pertinenti, et, fere in medio, spina altera minore deorsum directa, leviter arcuata armato. — ♂ ♀ *ad.* Long. c:a 8 millim.

*Syn.*: 1872. LYCOSA LAPPONICA THOR., Rem. on Syn., p. 273 (*ad part.*: ♀, excluso "exemplo fennico").

*naria* C. KOCH or *L. agricola* THOR. The spine under the male's bulbus genitalis is as long as in *L. agricola*, more than 3 times as long as it is broad at the base. The tarsi of the 1st pair are for the greatest part black, yellow at the base, the tarsi of the succeeding pairs are entirely yellow.

Pag. 323. *Lycosa tæniata* WESTR.; pag. 326. *L. cursor* ID. — Dr L. KOCH has favoured me with a male and a female specimen of

*Femina*. — *Cephalothorax* niger, pube luteo-fusca et pilis longioribus nigricantibus minus dense vestitum, vittis tribus longitudinalibus clarioribus luteo-pilosis. *Pedes* supra lutescenti-pubescentes, nigro-pilosi. *Tibiæ* anticae subter ut in *L. lapponica* aculeati. *Abdomen* nigrum, supra pube ferrugineo vel luteo-fusco sat dense vestitum, antice linea vel vitta abbreviata luteo-pilosa, nigro-marginata, et pone eam, versus latera, serie utrinque ex punctis albicantibus in vitta paullo obscuriore locatis, quæ series versus anum appropinquant; etiam in interstitio inter has series vestigia seriei tertiæ mediæ interdum adsunt. Præterea in feminam cadunt, quæ de ea pag. 274 (secundum exemplum detritum) diximus, exceptis verbis illis de "exemplo Fennico", quod non est hujus speciei, sed veræ *L. lapponicæ*.

*Mas*. — *Cephalothorax*  $4\frac{1}{4}$  millim. longus, 3 millim. latus, ad colorem ut in ♀, in fundo niger, vittis lateralibus tamen vix vel non manifestis. *Sternum* nigrum, luteo-pilosum. *Mandibulæ* nigrae, apice intus sub-ferrugineæ. *Maxillæ* et *labium* picea vel nigra, margo illorum et hujus apex testacei. *Palpi* nigri, supra fusco-testaceo-sub-lineati, lamina atra, nitida, cum partibus patellari et tibiali non nisi nigro-pilosa. Bulbi pars basalis non valde inflata, antice transverse et paullo oblique truncata, ibique in medio emarginata: ex hac emarginatione exit procursus sub-transversus sive spina brevis, fortissima, fere semi-lunata, ad marginem bulbi non pertinens, primum anteriora versus directa, sed mox foras et paullo retro curvata; a latere posteriore visa hæc spina versus apicem acuminatum angustata est, a latere interiore vero visa paullo angustior est ad basin; extra et pone basin hujus spinæ dens parvus, deorsum directus adest; supra spinam, fere ex medio bulbi, exit altera spina angustior multo et brevior, deorsum directa, et paullo foras et anteriora versus curvata. *Pedes* piceo-ferruginei, nigro-pilosi, coxæ subter ad basin ferrugineæ; femora nigro-picea, supra ad apicem macula sub-testacea oblonga, linea longitudinali nigricanti in duas divisa, notata, et, cum patellis supra nigricanti-lineatis et tibiis, lutescenti-pubescentia. *Pedes* 1:mi paris cæ 11½, 4:ti 15½ millim., patella cum tibia hujus paris 4¾ millim. *Abdomen* nigrum, obscurius quam in ♀, ordinibus punctorum albicantium minus manifestis, linea vel vitta antica abbreviata testacea plus minus expressa.

*Mas jun.* ad colorem cum ♀ convenit, sed pedes in illo clariiores sunt, fusco-testacei, femoribus supra plus minus distincte fusco-maculatis, palpi obscure testacei, parte tarsali etiam clariore.

Specimina nonnulla ex alpibus provinciæ Herjeådalen Sueciæ et singulum (femineum) ex Karesuando Lapponiæ Fennicæ possideo.

a *Tarentula* from Nürnberg, which he considers as the true *I. cursor* HAHN, and which is quite different from and much smaller than the variety of *I. tæniata* WESTR. or *Tar. aculeata* (CLERCK), N., which I, with WESTRING, took to be identical with HAHN's *L. cursor*. In favour of L. KOCH's opinion may be adduced, that, according to HAHN's description and figure, "*L. cursor*" has broad pale lateral bands on the cephalothorax, which is not the case in *L. cursor* WESTR. or *T. aculeata*, Var.  $\gamma$ , N.; against this identification might be objected that the size of "*L. cursor*", according to HAHN, is much greater than that of the species to which L. KOCH applies the specific name *cursor* HAHN. As however the measures given by HAHN are often extremely faulty, I think that no great weight can be laid on this latter circumstance; I now believe that Dr KOCH is right in his identification, and that *L. cursor* HAHN must be effaced from the synonyms of *L. tæniata* WESTR.

The true *T. cursor* (HAHN), (L. KOCH), is very closely allied to the spider, which I have described (p. 326) under the name of *T. Simonis*: had not the sexual organs presented some slight differences, I should have considered these two forms to be identical. — The female of *T. cursor* is about  $7\frac{1}{2}$  millim. long; its cephalothorax is  $3\frac{1}{2}$  millim. in length and  $2\frac{1}{4}$  millim. in breadth, the 1st pair of legs is  $7\frac{1}{2}$ , the 4th  $10\frac{1}{2}$ , the patella + tibia of the 4th pair 3, the tibia alone 2 millim. The cephalothorax is dark brown with three pale, greyish, longitudinal bands, the middle one very broad, somewhat tapering on the hinder slope; the lateral bands are also rather broad, coarsely dentated in the inner margin. The sternum is blackish brown, glossy; the legs and palpi of a dark yellowish brown, the femora with dark spots, the following joints with more or less distinct dark rings. The abdomen is of a greyish dark-brown colour; on the upper part, in front, it exhibits two large, oblong, oblique, orange-yellow spots, together forming a large and coarse  $\wedge$ ; behind this mark are two much smaller, longitudinal, greyish yellow spots or lines somewhat diverging behind; immediately behind these spots, from the middle of the back to the anus, a broad dentated greyish yellow band extends itself, which band by some angularly bent, narrow, transverse, dark lines is more or less distinctly divided into a series of transverse spots; the belly is greyish yellow. The vulva consists of a rather large and shallow fovea, which is not longer than it is broad, open behind, and produced somewhat triangularly in front; its elevated side-borders are almost

parallel, but slightly converging backwards. — The *male* is about 6 millim. long, the length of its cephalothorax is 3, its breadth  $2\frac{1}{2}$  millim.; the 1:st pair of legs are 7, the 4:th pair 10 millim., patella + tibia of the 4:th pair 3, tibia 2 millim. The colour is the same as in the female, only a little darker; the lateral bands of the cephalothorax appear however to be less distinct. The bulbus has on the under side, in front of the middle, a compressed, forward directed process which becomes somewhat broader towards its free end, which is truncated and slightly emarginate: the upper corner of this end forms a somewhat acute angle or short tooth directed forward, *the under corner is produced into a long, slender, slightly backward-curved, downward directed tooth.* (In *T. Simonis* this process is smaller, and the under corner of its truncated and slightly emarginated apex forms an acute, prominent angle, but is not drawn out into a long curved tooth).

Pag. 341. *Lycosa piratica* WESTR. — Add to the synonyms:

1861. *LYCOSA PIRATICA* BLACKW., Spid. of Gr. Brit., I, p. 34, Pl. II, fig. 16.

Pag. 344, line 6—8. — Instead of, "The mandibles are in both sexes [of *Pirata hygrophilus* THOR. or *Lyc. piscatoria* BLACKW.] but *inconsiderably longer* than the metatarsi of the 1:st pair", read:.... but *inconsiderably shorter* than the metatarsi of the 1:st pair.

Pag. 347, 472. *Dolomedes ornatus* BLACKW. — The species from Lucca, which BLACKWALL describes under the name of *D. ornatus* <sup>1)</sup>, appears to be different from that, to which he has originally given this name, and which certainly is but a variety of *D. fimbriatus*; the Italian form may be called *Dolomedes lucensis*.

Pag. 359. *Epiblemum* HENTZ. — SIMON maintains (Révis. d. Attidæ, p. 331 (109)), that the genus *Epiblemum* HENTZ, of which HENTZ has described two species, *E. faustum* and *E. palmarum*, by no means corresponds with the genus *Calliethera* C. KOCH, and that this latter name cannot therefore be changed for the former; he says that the generic name *Epiblemum* belongs to *E. palmarum*, but not to *E. faustum* (= *Calliethera histrionica* C. KOCH?), which I (On Eur. Spid., p. 210) accepted as the type of the genus *Epiblemum*. In support of this view he appeals to the diagnosis of the genus given by HENTZ, 1846 (in the Boston Journ. of Nat. Hist., V, p. 366),

1) A list of Spid. captured in the province of Lucca, etc., in the Linn. Soc. Journ., X, p. 407.

which suits *E. palmarum* better than *E. faustum*. But HENTZ himself, already in 1832, in his paper (referred to by me, loc. cit.!) "On North American Spiders", in the American Journal of Science and Arts, XXI, p. 108, where the genus *Epiblemum* was first proposed and characterized, expressly sets up *E. faustum* as the type of that genus<sup>1)</sup>. Had SIMON been aware of this, his remark would probably never have been made.

Pag. 368. *Attus strigipes* WESTR. — Add to the synonyms:  
 ?1833. ATTUS MUSCOSUS, Var. a, SUND., Sv. Spindl. Beskr., in Vet.-Akad. Handl., 1832, p. 208.

Prof. STÅL has lately sent me several Swedish specimens of *Marpessa radiata* (GRUBE) or *Attus strigipes* WESTR. — among them an adult male — captured by the late Prof. BOHEMAN in the isle of Gotland and in the neighbourhood of Stockholm. — On *A. muscosus* SUND., see pag. 375.

Pag. 425. *Thomisus Cambridgii* BLACKW. — The spider described by CAMBRIDGE under the name of *Th. Cambridgii* ♂ is not the male of *Th. Cambridgii* BLACKW.: see above, p. 568.

Pag. 450. *Walckenaëra punctata* BLACKW. — A female specimen of *Erigone punctata* (BLACKW.) has been captured in Upland by Mr G. EISEN. This species is now for the first time recorded as inhabiting Sweden.

Pag. 465. *Dysdera erythrina* BLACKW. (*D. Cambridgii* N.). — In the isle of Formentera a *Dysdera* occurs, which in the form of the bulbus genitalis of the male greatly resembles *D. Cambridgii*, but is very much smaller, only about 5 millim. long: I call this species *D. pumila*<sup>2)</sup>.

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1) "... I have concluded to make the first of the two following the type of a new genus. *Epiblemum faustum* obscure, cephalothorax edged with white, with two spots on the disk also white, abdomen edged at base, and with four short bands, white. *E. palmarum* deep ferruginous, with two bands on the cephalothorax and the abdomen, white; second, third and fourth pair of legs whitish". HENTZ, loc. cit.

2) *Dysdera pumila* N. — *Mas ad.* Long. c:a 5 millim. — *Cephalothorax* 2 millim. longus, c:a 1½ millim. latus, longitudine patellam + tibiam 1:mi paris æquans, clypeo vix 1 millim. lato; convexior, punctis impressis minutissimis densissimis, aliisque sat magnis rarioribus rugosus. *Oculi* antici inter se spatio distantes, quod dimidiam oculi diametrum fere æquat; præterea oculi inter se pæne contingentes sunt. *Mandibulæ* graciles, supra sub-rugosæ, granulis parvis piliferis sparsæ, ad basin, supra, inpressione transversa lævi præditæ, paullo plus

Pag. 468. *Dysdera crocota* C. KOCH; pag. 469. *D. rubicunda* BLACKW. — I have lately received of Dr F. SÖDERLUND a male specimen of a *Dysdera* from the island of Mallorca, which is very closely allied to *D. maurusia* N. and *D. crocota* C. KOCH, especially the latter, but which appears to be different from both. The colour of this species, which I call *D. balearica*, is about the same as in *D. crocota*, *D. maurusia*, *D. Cambridgii* and *D. rubicunda* (on these species see above, pp. 466—468): cephalothorax and sternum are rust-coloured, with a fine black lateral border, the oral apparatus also rust-coloured, palpi and legs of a rusty yellow colour, abdomen greyish yellow. Cephalothorax and sternum are finely rugulose, as in the above-mentioned species. The anterior eyes are separated by an interval about as great as the diameter of one of these eyes. The body is about 10 millim. long, cephalothorax 4 millim. (= patella + tibia 2:di paris), its greatest breadth 3 millim. The clypeus is 2 millim. broad; the mandibles, which are as long as the tibiæ of the 4:th pair, are little more than 2 millim. long, scarcely longer than the clypeus is broad; above they are provided with scarce hairs and indistinctly transversely striated. The 1:st pair of legs are 13 millim., their tibia 2½ millim. long; the legs are destitute of spines, with exception of the thighs of the 4:th pair, which have a small spine at the base, above, and the tibiæ and metatarsi of the two posterior pairs, which are armed with several spines. The genital bulb is of the same general form as in *D. crocota*, strongly tapering or depressed on the anterior side somewhat above the middle, where the basal part passes into the "shaft", and forms at this point, on the inner side, a prominent, obtuse angle or coarse pro-

1 millim. longæ, tibia 1:mi paris longitudine æquantes. *Palpi* et *pedes* ferrugineo-flavi, *pedes* 1:mi paris 5 millim. longi; tibiæ et metatarsi pedum 3:tii et 4:ti paris aculeis armati, femora omnia, ut *pedes* prætera, inermia. Bulbus genitalis magnus, valde longus, ex parte basali inæquali, inverse ovata fere, et scapo sat longo constans: pars basalis in utroque latere versus medium incrassata est et paullo infra, in latere exteriore, hamo forti, sursum curvato, acuto, obscuro armata, deinde in scapum satis æqualiter transiens; scapus præterea sat æqualis et angustus, cum parte basali angulum valde obtusum formans, anteriora versus et intus directus; in apice sub-dilatato scapus limbum tenuem ostendit, qui, ex angulo apicis exteriore oriens et ad latus ejus exterius productus, hic in latus anteriorius scapi oblique ascendit et ad latus ejus exterius desinit. *Abdomen* obscure cinereo-testaceum, ventre pallidiore.

Marem unicum, in insula Ophiusa (*Formentera*) a D:re F. SÖDERLUND captum, possideo.

tubérance. The basal part is short and almost ovate, of a pale brownish yellow, with two dark transverse bands; the shaft, which is somewhat paler than the basal part, with a couple of longitudinal brown bands, is at the base as broad as the basal part of the bulb, and divides itself into two branches, which are separated by a small notch or form an extremely obtuse angle with each other; the upper part or basis of the shaft tapers downwards and is scarcely longer than it is broad at the base; the longer branch, which is directed inwards and forwards, is nearly of uniform breadth and straight, and about as long as the upper part or basis of the shaft, with which it forms an obtuse angle, and *in this (rounded) angle a small tooth is perceived*; the apex of the branch, which is unevenly and obliquely truncated, exhibits at the anterior side, near the middle, two small, closely-sitting teeth (or a small process cloven into two teeth?). The other branch, which is much shorter and somewhat narrower, and points in an opposite direction, is but little longer than it is broad, curved slightly upwards, and *has two small teeth at the extremity, above*.

Pag. 469. *Scytodes thoracica* BLACKW. — The male of this spider has been captured by VAN HASSELT <sup>1)</sup> in a house at Utrecht; this arachnologist has also observed the copulation of the species.

Pag. 500. *Textrix caudata* L. KOCH. — This species has newly been described by L. KOCH in his 'Beitrag z. Arachniden-fauna Tirols, 2:te Abhandl.', p. 283.

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As this work is in fact a continuation of the treatise I some time ago published under the title, "On European Spiders, Part I", some additions and corrections to that last mentioned work may perhaps here not be out of place. I shall however confine myself to what seems to possess a more general interest, first adding a supplement to the list of arachnological literature given by me in the work referred to pp. I—XXIV, 234, 235. As in that list, so also

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1) *Vid.* Verslag van de dertiende algemeene Vergadering d. Nederl. Entom. Vereeniging, in Tijdschrift voor Entom., I, 2, p. 41; Conf. SIX, Lijst van Spinn., etc., in HERKLOTS, Bouwstoffen voor eene Fauna v. Nederland, II, p. 302.



here those works only are in general inserted, which treat of *recent*, *European* spiders, and the contents of which are of a *systematical* or *descriptive* (and *zoo-geographical*) character. From among arachnological works, the contents of which are of a different character, those only have been admitted, which I have in the present treatise had occasion to cite (their titles are enclosed in brackets); the same course has been followed with respect to works treating of *exotic* spiders, the titles of which are here printed in smaller type. The date before the title of a work marks the year when it was *published*. A † placed before the title indicates that the work belongs to the præ-Linnæan period, an \*, that I have not myself had the opportunity of consulting it. Conf. l. c., pp. 15, 19. — As far as I am acquainted with the meagre litterature that exists on the subject of *fossil* spiders, I have given a brief account of it, loc. cit., pp. 220—233<sup>1</sup>).

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1) It may be asked why I, in my catalogue of arachnological litterature, have not included any other works than those written in Latin or in the living languages of Teutonic or Roman origin: the reason is not that I undervalue what may have been written in other languages — which I am very far from doing — but simply that I am unable even to understand the titles of works written in, for example, Russian, Polish, Bohemian, Finnish or Magyar, and thus I have only by accident come to learn that a couple of works in these languages treat on arachnological subjects. — It may in general be taken for granted, that a person of liberal education has some acquaintance with Latin, and knows at least one Teutonic and one Romanic language; and when this is the case he can, without any great waste of time, learn so much of the others as to be able, with the help of a grammar and dictionary, to understand the purely descriptive works within his own department, that are written in those languages. This is probably the reason why, in determining questions of priority, it is customary to attribute as much importance to works written in, f. inst., Portuguese or in Swedish as to those written in any of the more generally studied languages. But it is of course impossible to assign the same weight to *all* languages: no naturalist can have time to acquire the knowledge of all the *European* languages, which have already a scientific litterature to show, and the languages of this part of the world will assuredly not long continue to keep exclusive possession of that territory. It would seem therefore to be absolutely necessary, even for the future, in the selection of the works of which a zoologist or botanist ought to be expected to possess a knowledge, and which in the determination of questions of priority ought to be taken into account, to confine oneself to those which are written in the living languages of Teutonic or Roman origin and in Latin. — The want of a *common* scientific language will unquestionably become gradually more and more felt; and as a return to Latin can hardly be expected, it is not improbable that *English* may some time or other acquire that rank, not only

1871. AUSSERER, A., Beiträge zur Kenntniss der Arachniden-Familie der Territelariæ THOR. (Mygalidæ AUTOR.) (Verhandl. d. zool.-bot. Gesellsch. in Wien, XXI, 1871).
1871. — ID. — Neue Radspinnen (ibid.).
1853. BELKE, G., Quelques mots sur le climat et la Faune de Kamieniec-Podolski (Bull. de la Soc. Imp. d. Nat. de Moscou, XXVI, Année 1853).
1859. — ID. — Esquisse de l'histoire naturelle de Kamienietz-Podolski, précédé d'un coup d'oeil sur les travaux des Naturalistes des provinces occidentales de la Russie et du Royaume de Pologne au XIX siècle (ibid., XXXI, 1858).
1866. — ID. — Notice sur l'histoire naturelle du district de Radomysl (Gouvernement de Kief) (ibid., XXXIX, 1866).
1870. BERTKAU, PH., Ueber den Bau und die Function der Oberkiefer bei den Spinnen und ihre Verschiedenheit nach Familien und Gattungen (Archiv f. Naturgeschichte, Jahrg. XXXVI, I, 1870).
- [1867. BLACKWALL, J., A succinct review of recent attempts to explain several remarkable facts in the physiology of spiders and insects (Linn. Soc. Journ., Zool., VII)].
1870. — ID. — Description of a new species of Epeira (Ann. and Mag. of Nat. Hist., 4 Ser., IV (1869)).
1870. — ID. — A list of Spiders captured by Prof. E. Percival Wright M. D. in the province of Lucca, in Tuscany, in the summer of 1863, with characters of such species as appear to be new or little known to arachnologists (Linn. Soc. Journ., X).
1870. — ID. — List and descriptions of species [of Sicilian Spiders] etc., vid. WRIGHT and BLACKWALL.
1872. — ID. — Notice of Spiders captured by Miss Hunter in Montreal, Upper Canada, with descriptions of species supposed to be new to arachnologists (Ann. and Mag. of Nat. Hist., 4 Ser., VIII (1871)).
- [1850. BÖTTCHER, Ueber den anatomischen Bau der Kreuzspinne

because that language is far more widely diffused over every part of the earth than any other culture-language, and that already two of the greatest nations publish in it the results of their scientific labours, but because English, on account of its simple grammar, and as combining in nearly the same degree Teutonic and Romanic elements, is by most Europeans more easily acquired than any other language.

(in Programm der höhern Bürgerschule zu Graudenz. Graudenz 1850].

- \*†1721. BRADLEY, R., A philosophical account of the works of nature, endeavouring to set forth the several gradations remarkable in the mineral, vegetable and animal parts of the creation, tending to the composition of a scale of life. To which is added an account of the state of gardening as it is now in Great Britain etc. London 1721.  
BRITO CAPELLO, F. DE, vid. CAPELLO.
- 1870. CAMBRIDGE, Notes on some Spiders and Scorpions from St. Helena, with descriptions of new species (Proceed. of the Zool. Soc. of Lond., 1869).
- 1871. — ID. — On some new genera and spec. of Araneidea (ibid., 1870).
- 1871. — ID. — Descriptions of some British Spiders new to science; with a notice of others, of which some are now for the first time recorded as British species (Transact. of the Linn. Soc., XXVII (1870)).
- 1871. — ID. — Bibliographical Notice (Ann. and Mag. of Nat. Hist., 4 Ser., VI (1870)).
- 1871. — ID. — [Part Arachnida] (The Zoological Record for 1870; being Vol. VII of the Record of zoological literature. Edited by A. NEWTON. London 1871).
- 1872. — ID. — General list of the spiders of Palestine and Syria (Proceed. of the Zool. Soc. of London, 1872).
- 1871. CANESTRINI, GIOV., and PAVESI, P., Catalogo sistematico degli Araneidi Italiani (Archivio per la Zool., l'Anat. e la Fisiolog., Ser. II, Vol. II (1870)).
- 1866. CAPELLO, F. DE BRITO, Espécies novas ou pouco conhecidas d'Arachnidos d'Africa occidental (Jornal de Sciencias mathem., phys. e naturaes, Num. 1).
- 1871. CARRUCCIO, A., Sulla più esatta determinazione dei caratteri della Nemesia fodiens (Bullett. della Soc. Entom. Ital., III (1870)).
- \*1847. CONTARINI, N., Sul volo dei ragni e sopra una nuova specie di ragno volatore (Atti dell' Istit. Veneto, VI).
- 1826. DALMAN, J. W., Om insekter inneslutne i Copal; jemte beskrifning på några deribland förekommande nya släkten och arter (K. Vet.-Akad. Handl., 1825).
- [1850. DUMÉRIL, C., Observations sur le Theridion civicum H. LUCAS (Ann. de la Soc. Ent. de France, 2 Sér., VIII)].

1868. ERBER, J., Bericht über eine Reise nach Rhodus (Verhandl. d. zool.-bot. Gesellsch. in Wien, XVIII, 1868).
1780. FABRICIUS, O., Fauna Grœnlandica, systematice sistens animalia Grœnlandiæ occidentalis hactenus indagata, quoad nomen specificum, triviale, vernaculumque: synonyma auctorum plurium, descriptionem, locum, victum, generationem, mores, usum, capturamque singuli, prout detegendi occasio fuit, maximaque parte secundum proprias observationes. Hafniæ et Lipsiæ 1780.
- \* 183.. FISCHER-DE-WALDHEIM, Oryctographie du gouvernement de Moscou. Moscou 1830—1837.
1840. FÜRNROHR, A. E., Naturhistorische Topographie von Regensburg. In Verbindung mit FORSTER, HERRICH-SCHÄFFER, KOCH, v. SCHMÖGER und v. VOITH bearbeitet. 3 Voll. Regensburg 1838, 1839, 1840. — *Vol. III also with the title: Fauna Ratisbonensis, oder Uebersicht der in der Gegend von Regensburg einheimischen Thiere, von K. L. KOCH, A. HERRICH-SCHÄFFER und F. FORSTER ('Crustacea, Myriapoda et Arachnides. Bearbeitet von K. L. Koch', in Vol. III).*
1869. GIEBEL, C., Ueber einige Spinnen aus Illinois (Zeitsch. f. die gesammten Naturwissensch., XXXIII, 1869).
1869. — ID. — *Thomisus trigonus*, neue Spinne der Halleschen Fauna (ibid.).
1869. — ID. — Am Vierwaldstädter See (ibid., XXXIV, 1869).
1870. HASSELT, A. W. M. VAN, Studiën over den *Pholcus opilio-noides* SCHRANCK (Tijdschr. voor Entom., 2 Ser., V, 1869). *Also in French: Études sur le Pholcus opilionoides* (Archives Néerlandaises, V, 1870).
1870. — ID. — [*On some spiders captured at Leiden, in Verslag van de 25:ste algem. Vergadering d. Nederl. Entom. Vereeniging*] (Tijdschr. voor Entom., XIV, 1871).
1871. — ID. — [*On Eresus annulatus, and on some spiders collected near Breda in Holland, in Verslag v. de 26:ste zomervergad. d. Nederl. Entom. Vereen.*] (ibid., XV, 1872).
1872. — ID. — Over den *Eresus annulatus* HAHN (ibid.).
- [1872. — ID. — Waarneming der Copulatie bij eene der kleinste Spinsoorten (*Micryphantes* s. *Erigone rurestris* C. KOCH), (ibid., XVI, 1873)].
1872. — ID. — [*On some spiders captured at Haarlem, in Verslag v. d. 27:ste zomervergad. d. Nederl. Entom. Vereen.*] (ibid.).

- [1868. HERMAN, C. O., Ueber das Sexualorgan der *Epeira quadrata* WALCK. (Verhandl. d. zool.-bot. Gesellsch. in Wien, XVIII, 1868)].
1871. KOCH, C. [K.], Lebensweise und Vorkommen einer central-europäischen Würgspinne, *Atypus Sulzeri* LATR. (Der Zoologische Garten, XII).
1840. KOCH, C. [K.] L., in *Fauna Ratisbonensis*, *vid.* FÜRNRÖHR.
1869. KOCH, L., Beitrag zur Kenntniss der Arachnidenfauna Tirols (Zeitschrift des Ferdinandeums, 1869. Also in: Zoologische Mittheilungen aus Tirol. Der 43. Versammlung deutscher Naturforscher und Ärzte gewidmet vom tirol. vorarlb. Landes-Museum (Ferdinandeum) zu Innsbruck 1869. Innsbruck 1869).
1870. — ID. — Beiträge zur Kenntniss der Arachnidenfauna Galiziens (XLI Jahrbuch der K. K. Gelehrten Gesellschaft in Krakau). — Also separate: Krakau 1870.
- 1871–187.. — ID. — Die Arachniden Australiens nach der Natur beschrieben und abgebildet. Nürnberg 1871–187... [Lief. 1–3 (pp. 1–152): 1871; 4–6 (pp. 153–296): 1872; 7 (pp. 297–368): 1873. — *The work is still in progress*].
1872. — ID. — Apterologisches aus dem Fränkischen Jura (Abhandl. d. Naturhist. Gesellsch. zu Nürnberg, 1872).
1872. — ID. — Ueber die Spinnengattung *Titanœca* THOR. (ibid.).
1872. — ID. — Beitrag zur Kenntniss der Arachnidenfauna Tirols. Zweite Abhandlung (Zeitschr. d. Ferdinandeums, 1872).
1798. LATREILLE, P. A., Mémoire sur les Araignées mineuses (Mém. de la Soc. d'Hist. Nat. de Paris, An VII (1798)).
- †1811. LINNÆUS, C., *Lachesis Lapponica*, or a Tour in Lapland, now first published from the original manuscript Journal of the celebrated Linnæus; by J. E. SMITH. London 1811. 2 Voll. [Vol. I].
1848. LUCAS, H. [*Notice of Latrodectus martius*] (Ann. de la Soc. Ent. de France, 2 Sér., VI, Bull.).
1868. — ID. — [*On spiders observed in the neighbourhood of Roscoff, Finistère*] (ibid., 4 Sér., VIII, Bull.).
1868. — ID. — [*On the occurrence of Hersilia oraniensis in Spain*] (ibid.).
1869. — ID. — [*On some spiders captured at Rome*] (ibid., 4 Sér., IX, Bull.).

- \*1838. MARTENS, G. VON, Reise nach Venedig. Ulm 1838. 2 Voll. [Voll. II].
- \*1845. — ID. — Italien. Stuttgart 1845.
- 1866—187.. MENGE, A., Preussische Spinnen. [I—III Abtheil. (Schrift. d. Naturforsch. Gesellsch. in Danzig; Neue Folge I—II: *vid.* THOR., On Eur. Spid., p. xvii); IV Abtheil. (pp. 265—296): *ibid.*, Bd. II, Hft. 3, 4, 1871; V Abtheil. (pp. 297—368): *ibid.*, Bd. III, Hft. 1, 1872]. — *Also separate*: Danzig 1866—72. [*The work is still in progress*].
1869. NINNI, A. P., Catalogo degli Araneidi Trevigiani. Venezia 1869.
1870. — ID. — Indice alfabetico-sinonimico e sistematico degli Aracnidi Veneti dell' ordine Araneina. Parte prima. Venezia 1870.
- [1856. OZANAM, CH., Étude sur le venin des Arachnides et son emploi en Thérapeutique, suivie d'une dissertation sur le Tarentisme et le Tigretier. Paris 1856].
1869. PAVESI, P., *vid.* CANESTRINI and PAVESI.
1872. — ID. — [*Article* Aracnidi] (VALLARDI, Enciclopedia medica Italiana).
- \*1816. POLLINI, C., Viaggio al lago di Garda e Monte Baldo, in cui si ragiona delle cose naturali di quel lago. Verona 1816.
1870. SIMON, E., Sur les Aranéides de la famille des Enydes, qui habitent l'Espagne et le Maroc (Revue et Magazin de Zoologie, XXI (1869)).
1871. — ID. — Aranéides nouveaux ou peu connus du midi de l'Europe (1<sup>er</sup> Memoire) (Mém. de la Soc. Roy. d. Sciences de Liège, 1870(?)). — *Also separate*: "Liège 1870".
- 1871, 1872. — ID. — Révision des Attides Européens. Supplément à la Monographie des Attides (Attidæ SUND.) (Ann. de la Soc. Ent. de France, 4 Sér., X).
1872. — ID. — Notice sur les Arachnides cavernicoles et hypogés (*ibid.*, 5 Sér., I (?)).
- [1872. SORDELLI, F., Intorno alla tela ed ai costumi di una specie di Ragno (Mithras paradoxus). (Atti della Soc. Ital. di Scienze nat., XIV, fasc. iv, 1872)].
1761. SULZER, Die Kennzeichen der Insekten, nach Anleitung des Königl. Schwed Ritters Karl Linnæus. Zürich 1761.

1872. TACZANOWSKY, L., Les Aranéides de la Guyane Française (Horæ Soc. Entom. Ross., VIII).
- 1869, 1870. THORELL, T., On European Spiders. Part. I. Review of the European genera of spiders, preceded by some observations on zoological nomenclature <sup>1)</sup> (Acta Reg. Soc. Scient. Upsal., Ser. III, Vol. VII, Fasc. I et II) [pp. 1—xxiv, 1—108: Nov. 1869; pp. 109—242: Febr. 1870]. — *Also separate*: Upsala 1869, 1870. [*Continued as a separate work under the following title*:]
- 1870—1873. — ID. — Remarks on Synonyms of European Spiders. Upsala 1870—1873. [N:o. 1 (pp. 1—96): April 1870; N:o. 2 (pp. 97—228): May 1871; N:o. 3 (pp. 229—374): April 1872; N:o. 4: April 1873].
1870. — ID. — Araneæ nonnullæ Novæ Hollandiæ (Öfvers. af Vet.-Akad. Förhandl., XXVII (1870)).
1872. — ID. — Om Arachnider från Spetsbergen och Beeren Eiland (ibid., XXVIII, 1871).
1872. — ID. — Om några Arachnider från Grönland (ibid., XXIX, 1872).
- \*1780. TURRA, Floræ Italicæ Prodrömus. Vicetiæ 1780.
- \*1817. WALCKENAER, C. A. DE, Mémoire pour servir à l'histoire naturelle des Abeilles solitaires qui composent le genre Halicta. Paris 1817.
1870. WRIGHT, E. P., and BLACKWALL, J. Notes on a collection of Spiders made in Sicily in the spring of 1868, by E. P. WRIGHT, with a list of the species and descriptions of some new species and of a new genus, by J. BLACKWALL (Ann. and Mag. of Nat. Hist., 4 Ser., V).
1870. ZIMMERMANN, H., Verzeichniss der Spinnen der Umgegend von Niesky. Abtheilung I. Ein Beitrag zur Kenntniss der Arachniden-fauna der Oberlausitz (Abhandl. d. naturforsch. Gesellsch. in Görlitz, XIV).

(On Eur. Spid., p. 15.) It is certainly a matter of small importance, whether we let the names of the families terminate in *-idæ* (*-ides*) or *-oidæ* (*-oides*); but as we find in many groups of animals the

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<sup>1)</sup> This is the title given by the Society in whose Acta the work is printed; the author had called it: 'Remarks on Synonyms of European Spiders, preceded by some observations on zoological nomenclature and a review of the European genera of spiders. Part I'.

termination *-oidæ* in frequent use (*Percoidæ*, *Tanioidæ* etc.), and, as we see from the words *ἀστεροειδής*, *πτενοειδής*, *σφαιροειδής* etc., it is right in words with the termination *-ειδής* to employ the connecting vowel *ο*, it would appear to be reasonable to write *Epeiroidæ*, *Theridioidæ* (-es), etc. — The termination *-æ* appears now in Zoology to be generally preferred to the equally correct termination *-es*, and I have accordingly employed it.

(L. c., p. 17; conf. sup., p. 2.) If I once more return to the *method of indicating the authority for a trivial name*, it is to point out an, as I think, important reason in favour of the method proposed by a Committee appointed by the British Association for the Advancement of Science (vid. l. c., p. 3). That the rules for both botanical and zoological nomenclature can be, and ought to be, brought into agreement, no one probably will be found to dispute; but there has been hitherto an important difference just in the method of indicating the authority for species-names, in as much as that botanists have been accustomed, after the name of a species, to subjoin, as the authority, the name of the writer who first registered such species under *the same both generic and specific names*, whereas it has been the custom of zoologists to adduce as authority the author who first made known the species by the *specific* name in question, even though he should have used *another generic* name, in which case *some* of them, in conformity with the recommendation of the above-mentioned Committee, enclose the name in *parentheses*. (Some zoologists *always* place the authority in parentheses, most of them however *never*). Thus, according to the method usually adhibited by botanists, the common garden-spider would be called *Epeira diademata* THOR. (just as we write for instance *Epeira adianta* WALCK.) and not, as the custom of zoologists is, *E. diademata* CLERCK or *E. diademata* (CLERCK). But, although even a congress of botanists has uttered its approval of the method hitherto usually employed in their science, another method of indicating the authority for specific names has nevertheless of late begun to come in use. It could in fact not fail to be observed, that what we chiefly should endeavour to gain by the citation of an authority, is a reference to the work wherein *the species was first made known*, which is in general identical with a reference *to the source of the specific name*; and when a species has been first described under a generic name *different* from that now in use, several botanists have therefore begun to cite *two* authorities, the first *enclosed in parentheses* and indicating the source



whence the *specific* name is derived, the other *without parentheses*, referring to the author, who first employed *both* the generic and specific names, thus for instance: *E. diademata* (CLERCK), THOR. But referring to *two* authorities will surely, except in some special cases, be found a supererogatory process, which will probably only be employed ad interim, to serve as a transition from the old to the new method of reference: I have indeed already seen a few botanical works, in which the more recent author's name has been systematically *omitted*. In this way the methods of indicating the authority employed by zoologists and botanists will be brought into perfect conformity — under the supposition, however, that the former, like the latter, place the authority *in parentheses*, when it refers *only* to the specific name; and in order to attain to this conformity, it were surely reasonable, if zoologists would generally adopt the trifling modification of their method, that I have here recommended.

(L. c., p. 26.) The genus *Apostenus* WESTR. has not as yet been met with in Great Britain and Ireland: vid. sup., p. 435. Among the common Swedish spiders on the contrary, which, as late as 1868, I supposed to be wanting in those countries, *Philodromus* (*Artanes*) *margaritatus*, *Lycosa monticola*, *L. tarsalis* (*palustris*), *L. (Tarentula) cuneata*, *Attus* (*Yllenus*) *v-insignitus* and others are really met with there. The number of known British spiders has of late years, especially through the researches of CAMBRIDGE, been very considerably increased, and at the present moment exceeds by no trifling amount the number of Swedish species known to me.

(L. c., p. 27.) My remark, that BLACKWALL had not observed the method discovered by MENGE, in which the males of at least some spiders transfer the sperma from the sexual aperture to the palpi<sup>1)</sup>,

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1) See MENGE, Ueber die Lebensweise d. Arachn., in *Neueste Schriften d. Naturforsch. Gesellsch. in Danzig*, IV, 1, pp. 39, 41 (1843); see also MENGE, *Preuss. Spinn.*, f. inst. I, p. 106 (1866): "Am 14 Mai 1856 sah ich wie ein männchen [of *Lin. monticola*] eben den dreieckigen steg auf dem deckengewebe gebaut hatte, um seinen samen darauf zu bringen. Es legte sich mit dem leibe über den steg und fuhr nun mit dem hinterleibe darüber hin und her, bis ein kleines, weisses samentröpfchen, von ziemlich dichter consistenz aus der öffnung der geschlechtstheile am anfang des hinterleibes trat und auf die basis des dreiecks zu liegen kam. Das tröpfchen war kaum so grosz wie der knopf einer feinen insectennadel. Sodann begab sich dass männchen unter den steg und tupfte mit dem kolben bald des einen bald des andern tasters auf das tröpfchen, wobei ich sehen konnte wie die am ende befindlichen häkchen sich bewegten und davon

requires so far modification, as that BLACKWALL had really advanced a good way on the road to the same discovery. In a paper bearing the title, "A succinct review of recent attempts to explain several remarkable facts in the physiology of spiders and insects", in Journ. of the Proceed. of the Linn. Soc., Zool., VII, pp. 157, 158, BLACKWALL shows how DUGÈS<sup>1)</sup>, in order to explain the possibility of the palpi being really organs of copulation, though the testes debouch on the under side of the abdomen, had proposed the question: "le conjoncteur [the genital bulb] ferait-il alternativement l'office de siphon absorbant et d'organe éjaculateur?", a question, which DUGÈS answers in the following terms: "Cela se peut, mais je n'ai rien pu observer, qui justifiât directement cette conjecture". BLACKWALL adduces further a short notice of MENGE's well-known observations on this subject, which notice he had found in the Reports on Zoology for 1843 and 1844, p. 195, published by the RAY Society, and according to which notice "the spoon-shaped palps of the males are in fact the copulative organs, with which they take the semen from the appropriate openings of the seminal ducts on the base of the abdomen, and transfer it to the sexual openings of the female". BLACKWALL had not himself seen MENGE's work, and was not therefore aware that in the above-mentioned notice the observations of that author are not quite correctly understood; and what BLACKWALL states that he had himself observed is therefore so much the more interesting, in as much as that it perfectly agrees with the observations of MENGE and AUSSERER. BLACKWALL's words are as follows:

"A male *Agelena labyrinthica*, confined in a phial, spun a small web, and among the lines of which it was composed, I perceived that a drop of white milk-like fluid was suspended; how it had been deposited there I cannot explain, but I observed that the spider, by the alternate application of its palpal organs, speedily imbibed the whole of it. Perhaps the only safe conclusion to be drawn from this very remarkable circumstance, taken in connexion with the previously well-ascertained office of these parts, is that it affords a complete answer in the affirmative to the question asked by M.

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aufnahmen, bis das ganze tröpfchen verschwunden war... Nach der aufnahme des samens in die tasterkolben näherte sich das männchen wieder das weibchen und vollzog mit übertragung desselben in die samentaschen die begattung". — Conf. ID., ibid., IV, pp. 281, 284 (*Agelena labyrinthica* and *A. similis*).

1) Observ. sur les Aran., in Ann. d. Sc. Nat., 2<sup>e</sup> Sér., Zool., VI, pp. 189, 190.

DUGÈS, namely, "le conjoncteur ferait-il alternativement l'office de siphon absorbant et d'organe éjaculateur?"

It is astonishing, how long it sometimes can be before certain scientific truths are generally acknowledged. That the genital bulb of the palpus is the copulative organ of the male spiders, is not now doubted by any one, who has occupied himself with studying the natural history of these animals; on the other hand all who have studied the anatomy of spiders, from TREVIRANUS <sup>1)</sup> down to DUGÈS <sup>2)</sup>, MENGE <sup>3)</sup>, VON SIEBOLD <sup>4)</sup> and BÖTTCHER <sup>5)</sup> etc., have found, that no connexion whatever can be traced between the organs which prepare the spermatic fluid and the palpi, and that the testes open far from these latter organs on the under side of the abdomen, near its anterior extremity, in a position corresponding to the vulva of the female; the little slit there, on which the efferent ducts of the testes have their orifices, may sometimes (f. inst. in some species of *Theridium*) be seen with the naked eye or a simple magnifying lens. Under such circumstances, what is more natural than to suppose, that the sperma, previously to the coition, is in some way or other transferred to the intromittent organs, the palpi? But even after the manner, in which this is at least sometimes effected, had been discovered by MENGE, and confirmed by AUSSERER (and in part also by BLACKWALL), we find the correctness of the observations of these arachnologists doubted or denied; the belief that the testes have their outlets into the palpi still has its followers, although no one has

1) Ueber d. inneren Bau d. Arachn., p. 77, Tab. 4, fig. 33 (1812).

2) "Nous noterons encore qu'il n'y a nulle communication directe entre ces organes [the organs of copulation of the male] et ceux que l'on trouve dans l'abdomen. De quelque manière qu'on procède à la dissection, on ne voit, dans les autres articles du palpe, aucun canal dirigé vers le tronc; et dans le ventre, on ne trouve que deux longs tubes très-flexués, vermiculés, comme le sont en général les vaisseaux spermatiques,.... et ouverts en avant par deux orifices très-voisins, ou plutôt par un orifice commun entre les stigmates pulmonaires, et là même où, dans la femelle, se trouve la vulve. Ces canaux testiculaires.... marchent.... sans envoyer dans le corselet la moindre ramification". DUGÈS, Observ. s. les Aran., p. 187 (1836).

3) Ueber die Lebensweise d. Arachniden, pp. 39, 41 (1843); Preuss. Spinn., I, pp. 32, 33 (1866).

4) Lehrbuch d. vergleich. Anat. d. wirbellosen Thiere, p. 550 (1848).

5) "Dass von den schlauchförmigen Testikeln, wie frühere Beobachter zwar auch nicht gesehen, doch vermuthet haben, Ausführungsgänge nach den... Palpen führen, kann ich auf dass bestimmteste verneinen". BÖTTCHER, Ueber d. anat. Bau d. Kreuz-spinne, p. 15 (1850).

ever been able really to observe any direct connexion between these organs. VAN HASSELT<sup>1)</sup> considers, that he cannot indeed question the truth of MENGE's statements, but thinks that no general theory for the fertilization of spiders can be based upon them. He appears accordingly to suppose, that in some spiders the testes have their outlets under the belly and in others into the palpi, a view, which, considering the very great uniformity generally found in the organization of spiders, and what we up to the present time know concerning the structure of their organs of generation, appears to me in the highest degree improbable. — That the transmission of the sperma to the palpi *always* takes place in the manner directly observed by MENGE in the case of *Agalena* and *Linyphia*, that is, so, that the male spider, before the coition, emits from the sexual aperture a drop of sperma on a kind of small web made for the purpose, which drop he then takes up in the genital bulbs of the palpi, is indeed not proved, and it is not improbable that the male sometimes applies the genital bulbs to the sexual aperture, and thus charges them with the fertilizing fluid. MENGE himself seems to suspect such to be the case with "*Lycosa rurestris*"<sup>2)</sup> (= *Trochosa ruricola* (DE GEER)?). That the transfer of the semen has been so seldom observed, may arise from many circumstances, f. inst. that it takes place very rapidly, or long before copulation, sometimes perhaps immediately after the last change of the skin.

HERMAN<sup>3)</sup> has written a paper "on the genital organ of the *Epeira quadrata*", in which MENGE's observations are quite incorrectly set forth and then even ridiculed<sup>4)</sup>. HERMAN imagines, that MENGE supposes the male spiders to draw the sperma from the genital

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1) Waarneming der Copulatie bij eene der kleinsten spinsoorten etc., in Tijdschr. voor Entom., XVI, p. 6.

2) "Nach dem Absteigen [after the coition] streicht es [the male] seine Taster-Kolben unter der Brust durch mehrere Malen an der Öffnung der Samen-Bläschen am Anfange des Hinterleibes, und bringt so wahrscheinlich den Samen hinein". MENGE, Ueber die Lebensweise d. Arachn., p. 43.

3) HERMAN, Ueb. das Sexualorgan der Ep. quadrata, in Verhandl. d. zool.-bot. Gesellsch. in Wien, XVIII (1868), pp. 923 et seq.

4) So for instance: "In neuerer Zeit mochte dieser Autor [MENGE] wohl die Beobachtung machen, dass der Palpus mancher Arten viel zu kurz ist, um damit den Bauch bequem zu erreichen und will nun weiter beobachtet haben, dass das ♂ in einem Winkel einige Fäden ziehe und mit Hilfe derselben den Hinterleib mit Gewalt so weit vorwärts biege, bis der Palpus den Samenleiter erreicht!!" HERMAN, l. c., p. 926 (4). — Of what MENGE really had observed, HERMAN has no idea.

aperture with the *lamina bulbi* or pars tarsalis of the palpus; and he then proceeds to show — which of course is not very difficult — that such a representation of the functions of the lamina is in fact "gerade gesprochen absurd". HERMAN further informs us that "he has come to the result, that the male spider's palpus is a perfect organ of copulation, which communicates with the reservoirs of sperma situated in the abdomen by means of the stalk that connects the cephalothorax with the abdomen"; but he wisely takes care not to affirm that he has himself seen the ducts whereby this communication takes place. All that he can adduce in proof of the "result" at which he has arrived, is, that if we "immediately before or during coïtus" press the abdomen, the pressure causes "a formal erection of the palpi". We may be permitted to wonder, whether it were not merely the nutritive fluid or blood, that HERMAN by this delicate experiment pressed into the animal's palpi; perhaps the experiment might succeed at other times than just previously to or during coïtus, and may not the "erection" have extended to the legs as well as to the palpi?

(L. c., pp. 29, 30.) The organ, which BLACKWALL looks upon as corresponding to a fourth pair of mamillæ grown together, and which I have called the inframamillary organ (= *cribellum* L. KOCH), I have lately subjected to a renewed examination, which however, — perhaps partly because I had no fresh specimens, but only such as were preserved in spirits, to employ — has not led to any satisfactory result. As I have already stated, this organ differs greatly in its structure from the mamillæ: it does not form, like these even in their simplest form, a cylinder evidently articulating with the abdomen, but consists merely of a particularly modified, somewhat elevated portion of the skin. Spinning tubes, at least such as are found on the mamillæ, are entirely absent. In *Amaurobius*, f. inst., the inframamillary organ is very densely covered with small spots of a paler colour resembling punctures, and bearing each in its centre a very fine, rather long, whitish hair: the hairs with which the inframamillary organ thus is covered, are of about equal length and thickness, only a little thicker at the base, blunt, not tapering towards their apices. On preparations of the inframamillary organ of *Amaurobius ferox* (for which I have to thank my friend Dr T. TULLBERG) I have thought I could perceive a thick bundle of fine parallel tubuli stretching from the inframamillary organ's inner surface to a large glandular organ, situated near to it in the posterior

part of the abdomen; but, while it is very easy to trace, to the very extremity of the spinning-tubes, the cavity of the ducts through which the secretion of the ordinary spinning-glands is discharged, the hairs on the inframamillary organ, which might be supposed to be analogous to spinning-tubes, are so fine that I am unable even with the highest magnifying powers to distinguish whether they are tubular or not, and I am therefore uncertain whether they really be efferent canals to the above-mentioned glandular organ. Should this be the case, as it indeed very possibly may be, the inframamillary organ is without doubt a spinning organ, like the mamillæ, but at all events this organ can hardly be considered as what BLACKWALL supposed it to be, a pair of mamillæ grown together.

L. KOCH<sup>1)</sup> states, that the inframamillary organ and calamistrum are found only in females and are *entirely absent in males*; in ♂ of *Amaurobius ferox* and *A. fenestralis (atrox)*, as also in the males of a couple of *Eresus*-species, I think however I have clearly seen an inframamillary organ, though perhaps more rudimentary, whereas the calamistrum in fact appears to be absent. — According to L. KOCH<sup>2)</sup> the genus *Filistata* also is provided with calamistrum and inframamillary organ. — When MENGE<sup>3)</sup> speaks of an "Afterdeckelchen" in front of the mamillæ also in *Melanophora Petiverii*, he probably by "unterer Afterdeckel" and "hypopygium" means something more than the inframamillary organ in, for example, *Amaurobius* — which he also denotes by the name unterer Afterdeckel or hypopygium —, especially as he says that he has observed that organ "in almost all spiders". (Conf. MENGE, l. c., IV, p. 287, in the description of *Cybæus*; *C. tetricus* MENGE however, as L. KOCH<sup>4)</sup> has already remarked, does *not* belong to *Cybæus* L. KOCH, but to *Amaurobius*).

(L. c., p. 42 et seq.) Through the researches of later years several new and highly remarkable forms of spiders have been brought to our knowledge, and it has now become more evident than it was even a few years ago, that a fully satisfactory classification of the Order of Spiders is a thing not soon to be expected, and that a by no means inconsiderable number of forms cannot without great uncertainty, even if at all, be included under the hitherto received fa-

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1) Die Arachniden Australiens, p. 220.

2) Ibid., p. 325.

3) Preuss. Spinn., V, p. 306.

4) Die Arachniden Australiens, p. 220.

milies and higher groups. If some spiders, f. inst. *Antrobia monmuthia* TELLK. and *Thaumasia senilis* PERTY, cannot possibly be with certainty classified perhaps only because they have been so imperfectly described or figured, there are others, which, although in almost every important respect accurately known, leave ample room for conjecture as regards their right systematical position, and which therefore for the present can be only provisionally classified. I shall here allow myself to make some remarks on the systematical place of certain such genera, in connexion with a short account of the most important points regarding the classification of spiders published during the last few years.

As the whole of this Order is still frequently termed *Araneides* (-idea, -idæ, -ina), I ought to mention the reasons that have induced me to use in preference the denomination *Araneæ* proposed by SUNDEVALL in his *Conspectus Arachnidum*, 1833. There is now no longer any *genus* of spiders called *Aranea*, and there cannot therefore be on that account any objection to calling the whole Order *Araneæ*. Moreover *Araneæ* surely signifies *Spiders*, just as *Aves* signifies *Birds*, and *Serpentes*, *Snakes*, and this alone is a sufficient reason for calling the Order of Spiders *Araneæ* and nothing else. That certain animals not belonging to that Order have in former times been classed as "Araneæ" or "Spiders", can give no more cause or reason for calling this order *Araneides* (-idea etc.), than the fact that Bats were once considered as birds, has given for calling the Class of Birds *Avides*, or that Whales, Crabs and Oysters were formerly looked upon as fish, for calling the Class of Fishes *Piscides*. Lastly the denominations *Araneides*, *Araneina* etc. are altogether *illogical*, for the addition of the terminations -ides and -ina etc., indicates an *enlargement* of the conception that lies in the word, to which such termination is appended: for instance, by *Carabidæ*, *Carabides*, *Carabina*, *Carabicina* we mean all *Carabi*, and besides a number of animals more or less closely allied to them, and *Araneides* (-ina etc.) accordingly properly speaking signifies spiders and animals nearly related to them, that is to say, the same that is now rightly expressed by the term *Arachnoidea* (*Arachnida*, -es). Moreover as regards the particular form *Araneides* (-ea, -æ), it is, as being a compound of a Greek and a Latin word, liable to the objection, that it is a *hybrid*, and should already on that account be rejected.

BERTKAU, in a valuable treatise on the mandibles of Spiders <sup>1)</sup>, has endeavoured to make use of the differences in the structure of these organs for systematization; the mandibles, as is well known, frequently offer very good characteristics for the distinction of genera and species, but for that of the higher groups this is but rarely the case. BERTKAU's attempt to group and characterize the families acknowledged by him exclusively according to the structure of the mandibles, appears to me therefore not to have led to any satisfactory result: he has not, for example, been able to discover any distinguishing differences in the mandibles of his *Drassides*, *Agelenides*, *Thomisides* and *Lycosides*, and when he, in order distinctly to segregate at least the *Thomisides* from the other three families mentioned, proposes to refer *Sparassus* and *Thanatus* to his *Lycosides*, he overlooks the fundamentally essential difference in the number and structure of the *tarsal claws*, which separates *Lycosoidæ* and *Thomisoidæ* and at once renders such a transfer impossible. That BERTKAU in consequence of the structure of the mandibles is obliged to refer *Meta Merianæ* to the *Theridides*, cannot fail to suggest further objections against his attempt to make the structure of the mandibles an essential distinctive mark of the families of spiders.

In his important work, 'General list of the Spiders of Palestine and Syria', CAMBRIDGE has given a systematic list of the families and genera of the spiders met with in those countries. We find from this, that he does not admit any 'Sub-orders', but at once divides the spiders into a number of 'Families', which are however not characterized in that work. The most important peculiarities of CAMBRIDGE's system (as compared with the arrangement of spiders made by me) appear to be, that he separates *Palpimanus* from *Eresus* (fam. *Eresoidæ* THOR.) and takes the first of these genera as the type of a separate family, *Palpimanides*, whereas *Eresus* is united with *Dictyna*, so as to compose the family *Dictynides* (I refer *Dictyna* to the subfam. *Amaurobiinæ* in the family *Agalenoidæ*); moreover that he refers to his *Agelenides* the genera *Enyo*, *Lachesis* (*Laches* THOR.), *Storena* and some others — among them *Cydicpe* CAMBR., or *Cydrela*, as I propose to call it, the name *Cydicpe* being preoccupied <sup>2)</sup> —, which I unite in a separate family, *Enyoidæ*; and lastly, that the

1) Ueber den Bau u. die Function der Oberkiefer bei den Spinnen etc., in Archiv f. Naturgesch., XXXV, 1, (1870).

2) *Cydicpe* [Cœlent.] ESCHSCH. 1829. — *Κυδοῦλος*, nom. prop.



sub-families *Uloborinæ* and *Pholcinæ* are considered by CAMBRIDGE as independent families. From the arachnological portion of 'The Zoological Record' for 1870, we learn that CAMBRIDGE also considers *Gasteracantha*, *Miagrammopes*, *Stephanopsis* and *Philodromus* as the types, each of a separate family.

The admirable work of L. KOCH, 'Die Arachniden Australiens', is of great importance for the systematization of spiders; as that work is however not yet completed, we shall first under the separate sub-orders and families adduce the most interesting contributions to the classification of spiders, which have been published in it, as well as in CAMBRIDGE's highly important paper, 'On some new genera and species of *Araneidea*', in AUSSERER's excellent treatise, 'Die Arachniden-Familie der Territelariæ', and in a few other works.

To the sub-orders acknowledged by me (*Orbitelariæ*, *Retitelariæ*, *Filigradæ* (fossil), *Tubitelariæ*, *Territelariæ*, *Laterigradæ*, *Citigradæ* and *Saltigradæ*), L. KOCH<sup>1)</sup> has added one, *Ruditelariæ*, for the genera *Thlaosoma* CAMBR. or *Celænia* THOR.<sup>2)</sup> and *Cryptothele* L. KOCH, without however indicating by what characteristics this sub-order differs from the others. It has been assigned a place immediately after the *Orbitelariæ*, which is no doubt right, if it be retained; but this does not appear to me to be necessary. Both the genera mentioned, which L. KOCH has with good reason assumed as the types of special families, appear in fact to me referable to the *Orbitelariæ*, although the animals belonging to them probably do not spin so-called geometrical nets<sup>3)</sup>. As to *Thlaos-*

1) Die Arachniden Australiens, p. 231.

2) The names *Thlaosoma* and *Celænia* were both published in 1868 (the latter not in 1863), and are therefore nearly cotemporaneous, but I think the first-named has the priority.

3) I remarked, On Eur. Spid., p. 47, that I reckoned to the Epeiroidæ all those spiders "that spin regular, so-called geometrical webs", by which I meant to express that I did not (like MENGE for example) see any reason to distribute these spiders into two or more families. As may be easily seen from pag. 71, note 1, of the work referred to, it was by no means my intention to affirm that *no other* spiders than those that make webs of this kind, can be classed under the Epeiroidæ or under the Orbitelariæ. I believe indeed that there does not exist any spider, that spins a geometrical net and does *not* belong to the Orbitelariæ; but I am fully convinced that there are Orbitelariæ, perhaps even *Epeiroidæ* sensu strictissimo, which spin either no web at all or an irregular one, just as there are many *Tubitelariæ*, that do not fabricate webs of the form characteristic for the typical species of that group, and many *Laterigradæ* and *Sal-*

*soma* <sup>1)</sup>, this view may, I think, be admitted in consequence of the presence of auxiliary or accessory claws in combination with *three* genuine claws on the tarsi (a circumstance that prohibits our referring this genus to the *Laterigradæ*), together with a not inconsiderable habitual resemblance to certain Epeiroidæ, especially as regards the form of the abdomen, wherein *Thlaosoma* more particularly differs from the Retitelariæ, the only other sub-order, in which, as far as I am aware, three genuine claws together with accessory claws are met with. That the legs of *Thlaosoma* are of the "laterigrade" type, would seem to be of no great consequence, as that is also the case in the *Arceyina*, which L. KOCH <sup>2)</sup> on, as it appears to me, perfectly satisfactory grounds, refers to the Orbitelariæ, since it has been found <sup>1)</sup> that these spiders have three genuine claws and accessory claws on the tarsi. *Cryptothele* is no doubt an extremely anomalous genus: it seems however to bear about the same relation to the *Epeiroidæ*, which *Stephanopsis* bears to the *Thomisoidæ*. *C. verrucosa* L. KOCH, the only species yet known, appears to me in a still higher degree than *Thlaosoma* to be, so to speak, a degenerate Orbitelarian, which nevertheless by its coarse and strong tarsal claws and its broad, flattened legs with longitudinal bald lines on the upper part of the patellæ and tibiæ, claims certain Epeiroidæ (for instance *Cærostris* THOR.) as its relations. — The genus *Æta* CAMBR. <sup>3)</sup> ought probably, as also CAMBRIDGE himself thinks, to be referred to the family *Epeiroidæ* (and sub-family *Epeirina*): to the same family I, in conformity with CAMBRIDGE, also refer *Chorizopes* CAMBR. <sup>4)</sup>, which however, as it seems to me, ought to form a separate sub-family. To the Orbitelariæ I am inclined to aggregate the remarkable genus *Phycus* CAMBR. <sup>5)</sup>, which CAMBRIDGE with doubt classes among his *Thomisides*, to which, provided as it is with three tarsal claws, it cannot in my opinion belong. The Orbitelariæ may then perhaps be at present divided into four Families, *Epeiroidæ*, *Thlaosomoidæ*, *Cryptotheloidæ* and *Phycoidæ*, and the first of these fami-

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*tigradæ*, that do not do justice to their sub-ordinal names, — a circumstance which, as one of course cannot found the natural grouping of animals on their *habits*, but upon their *organization*, must necessarily be of minor importance.

1) Conf. CAMBRIDGE, Bibliographical Notice, in Ann. and Mag. of Nat. Hist., 4 Ser., VI, p. 416; L. KOCH, Die Arachn. Austral., p. 231.

2) Die Arachniden Australiens, p. 215.

3) On some new gen. and spec. of Aran., p. 739.

4) Ibid., p. 737.

5) Ibid., p. 742.

lies into five Sub-families, *Epeirinae*, *Arceyinae*, *Uloborinae*, *Miagrammopinae* and *Chorizopinae*. Should any one prefer to erect these five last-mentioned groups into so many separate families, as CAMBRIDGE has done with, for instance, the *Uloborinae* and *Miagrammopinae*, such a course may certainly be justified; but to carry the subdivision of the Epeiroidæ any further than this, is, it appears to me, altogether unnecessary. — As a genus of Epeirinae new for the Fauna of Europe, we may mention *Peltosoma* SIM.<sup>1)</sup>, to which also *Peniza europæa*, described by AUSSERER<sup>2)</sup>, appears to belong. *Peltosoma* is very closely allied to *Cyrtarachne* THOR. (*Cyrtogaster* KEYSERL.), and perhaps ought not to be separated from that genus.

L. KOCH<sup>3)</sup> is inclined to separate the family *Enyoidæ* (also proposed by SIMON<sup>4)</sup> under the name of *Enydes*) from the *Retitelariæ*, and it cannot be denied, that the spiders of that family differ in several important particulars from the typical *Retitelariæ*, and show a relationship with sundry *Tubitelariæ*, with the *Agelenoidæ* for example. The genus *Cithæron* CAMBR.<sup>5)</sup> within this last-named family seems especially to stand upon the limit of transition to the *Enyoidæ*. CAMBRIDGE, as has been already stated, refers the *Enyoidæ* to his *Agelenides*; but in that case, how is this last-mentioned group to be characterized? — For the singular *Enyo amaranthina* LUC.<sup>6)</sup>, SIMON<sup>7)</sup> has created a separate genus, *Miltia* SIM., which is by SIMON referred to his *Enydes*, but by CAMBRIDGE to the *Filistatides*; L. KOCH<sup>8)</sup> is of opinion that it can hardly be considered as belonging to the *Enyoidæ* and still less to the *Filistatoidæ*, and that it probably forms a separate family, — which is also my opinion. To the *Enyoidæ*, according to the limits I assign to that family<sup>10)</sup>, *Miltia* cannot belong, for the inferior mamillæ are not longer than the superior. *Miltia* is probably one of those genera of spiders, which, standing on the limits between *Tubitelariæ* and *Retitelariæ*

1) Aran. nouv. ou peu connus du midi de l'Europe, p. 47.

2) Neue Radspinnen, p. 818 (4); Taf. V, figg. 4—7.

3) Die Arachniden Australiens, p. 296.

4) Sur les Aran. de la fam. d. Enydes etc., in Revue et Mag. de Zool., XXI (1869).

5) Spid. of Palestine and Syria, p. 273.

6) Explor. de l'Algérie, Anim. Artic., I, p. 231, Pl. XIV, fig. 7.

7) Sur les Aran. de la fam. d. Enydes, p. 15.

8) Spid. of Palestine and Syria, pp. 213, 219.

9) Die Arachniden Australiens, p. 300.

10) On Eur. Spid., p. 72; Aranæ nonnullæ Novæ Holl., p. 375.

or other sub-orders, will perhaps hereafter make the formation of one or several new sub-orders necessary. For the present the family *Miltioidæ* may perhaps best be placed among the *Tubitelariæ*, and at the head of that sub-order (accordingly between *Enyoidæ* and *Urocteidæ*). — The systematic position, that the genus *Dolophones* WALCK. ought to occupy, is quite uncertain. L. KOCH<sup>1)</sup> seems to be of opinion that it shows more agreement with the family *Enyoidæ* than with any other.

BLACKWALL<sup>2)</sup> has for *Gelanor* THOR. (*Galena* C. KOCH) and the new (European) genus *Ctenophora* BLACKW. — or *Ctenancala*<sup>3)</sup>, as I propose to call it, the name *Ctenophora* being preoccupied<sup>4)</sup> — formed the family *Ctenophoridae*; but as these spiders, at least *Ctenancala*, hardly appear to differ from the typical *Theridioidæ* by anything else than "a conspicuous comb-like appendage, consisting of a series of curved spines of various lengths symmetrically arranged, which is situated on the anterior side of each tibia and metatarsus of the first and second pairs of legs"<sup>5)</sup>, they may perhaps, as CAMBRIDGE<sup>6)</sup> has already remarked, be very reasonably referred to the *Theridioidæ*, quite as well as, for instance, the genus *Ero*. *Ctenancala* seems to be closely allied to *Mimetus* HENTZ.<sup>6)</sup> — Among genera of *Theridioidæ* lately characterized, *Ulesanis* L. KOCH<sup>7)</sup> and *Cephalobares* CAMBR.<sup>8)</sup> ought to be mentioned as particularly interesting.

Among the families classed by me under the *Tubitelariæ*, fam. *Omanoidæ* must be suppressed. I formed that family for a spider described by BLACKWALL under the name *Æcobius navus*, the characters of which deviated so largely from what I supposed myself to have observed in a couple of species of the genus *Æcobius*, that I had no other choice than to separate it from that family and, on the ground of these characters, form for it a separate genus and even a pecu-

1) Die Arachniden Australiens, p. 298.

2) Notes on a collection of Spiders made in Sicily, by E. PERCEVAL WRIGHT, with a list of the spec. and descr. of a new gen., by J. BLACKWALL, in Ann. and Mag. of Nat. Hist., 4 Ser., V, p. 401 (11).

3) *Kτείς*, comb; *ἀγκάλη*, arm.

4) *Ctenophora* MEIG. [Dipt.] 1803.

5) Spiders of Palestine and Syria, p. 287.

6) On North Amer. Spid., in the Amer. Journ. of Science and Arts, XXI, p. 104; Descr. and fig. of the Aran. of the U. S., in Boston Journ. of Nat. Hist., VI, p. 31.

7) Die Arachniden Australiens, p. 242.

8) On some new gen. and spec. of Aran., p. 734.

liar family. CAMBRIDGE<sup>1)</sup> has however since informed us that *Æcobius navus* BLACKW. is really an *Æcobius*. In this case BLACKWALL's description, at least as concerns the number of the eyes and tarsal claws, must be faulty. Although I have been unable to discover an inframamillary organ and calamistrum in *Æc. domesticus* and *Æc. annulatus* (I had but a single specimen of each at my disposal), it is very possible that these organs, in conformity with what BLACKWALL states about *Æc. navus*, may also exist in the two species mentioned: CAMBRIDGE<sup>2)</sup> describes a third species, *Æc. trimaculatus* CAMBR., which has not only a calamistrum, but *eight* mamillæ, "two very short, small and supernumerary being situated in front of the six ordinary ones". If by these supernumerary mamillæ be meant, not an inframamillary organ, but two real mamillæ, this is the first example, that has come to my knowledge, of a spider with four pairs of mamillæ. — SIMON<sup>3)</sup> reckons *Æcobius* to the same family as *Hersilia* and *Hersiliola*<sup>4)</sup>, which CAMBRIDGE<sup>5)</sup>, on grounds that appear to me reasonable, considers as erroneous. — The extinct family *Mizaloidæ* (vid. THOR., On Eur. Spid., p. 228) ought probably to occupy a place immediately beside the *Uroctoidæ* (*Æcobiides* CAMBR.).

*Stenochilus* CAMBR.<sup>6)</sup> ought without a doubt to form a separate family, *Stenochiloidæ*, among the Tubitelariæ, as it differs from the *Drassoidæ* not only by its narrow labium, the peculiar position of its eyes etc., but also by having, like *Palpimanus*, *Cryptothele* and *Dielacata* (vid. sup., p. 543), only *two* mamillæ. According to CAMBRIDGE, it shows an analogy with *Palpimanus* also in the form of the maxillæ and the greater relative strength of the coxæ and femora of the fore legs. Equally singular is the genus *Rhium* [*Rhion*] CAMBR.<sup>7)</sup>, for which it is without question necessary to form a separate family, *Rhioidæ*; it is chiefly distinguished by having six eyes, and three tarsal claws (which appear to resemble those of the *Agalenoidæ*), as also calamistrum and inframamillary organ. I conceive its natural

1) Bibliogr. Not., in Ann. and Mag. of Nat. Hist., 4 Ser., VI, p. 416.

2) Spid. of Palestine and Syria, p. 219.

3) Aran. nouv. ou peu connus du midi de l'Europe, p. 76.

4) *Hersiliola* THOR., On Eur. Spid., p. 115, is = *Hersilidia* SIM. (*Hersiliada* CAMBR.), Aran. nouv. ou peu connus etc., p. 79. The name *Hersiliola* has, as I am informed in a letter by Mr SIMON, the priority.

5) Spiders of Palestine and Syria, p. 221.

6) On some new gen. and spec. of Aran., p. 729.

7) Ibid., p. 740.

place to be in the proximity of the *Agalenoidæ*, with which, according to CAMBRIDGE, it is allied. According to this author, *Rhium* shows relationship also to *Uloborus* and *Miagrammopes*.

The arrangement I have given of the sub-order *Territelariæ*, is now, since the publication of AUSSERER's valuable work, 'Die Arachniden-Familie der Territelariæ', quite antiquated. AUSSERER indeed preserves the families formed by me, *Theraphosoidæ*, *Liphistioidæ* and *Catadysoidæ*, but resolves the first-named family into a large number (45) of genera and sub-genera. The *Theraphosoidæ* are divided into three sub-families: *Atypinæ*, with six mamillæ and the palpi inserted on the side of the maxillæ; *Eriodontinæ*, with the palpi inserted in the same manner, and four mamillæ; and *Theraphosinæ*, with four mamillæ and the palpi inserted at the apex of the maxillæ. The European genera acknowledged by AUSSERER as belonging to the *Theraphosinæ*, may be distinguished by means of the following scheme (where no notice is taken of the exotic genera):

A. Three tarsal claws.

a. Head high, rising rapidly from the thorax. Centre fovea of the cephalothorax  $\smile$ -shaped, open in front (*Æpycephali* AUSS.).

a. Mandibles drawn out into a toothed point. Tarsi armed with spines, without scopula in ♀.

1. The four lateral eyes form a rectangle, the height of which is scarcely = one third of its base (breadth) . . . . . *Cyrtocarenum* AUSS.

2. The four lateral eyes form a trapezium, of which the height is = half the base . . . . . *Cteniza* (BERTH.).

β. Mandibles rounded off in front, uniformly toothed. Tarsi unarmed, with scopula . . . . . *Cyrtachenius* (THOR.).

b. Head low, rising slowly from the thorax; centre fovea of cephalothorax transversal or  $\smile$ -shaped, open behind (*Tapinocephali* AUSS.).

a. Apex of mandibles, in front, furnished with a row of teeth resembling a carding-comb. . . . . *Nemesia* (SAV. et AUD.).

β. Mandibles destitute of teeth or spines at the apex.

1. Mamillæ not longer than half the length of the abdomen . . . . . *Brachythele* AUSS.

2. Mamillæ equal in length to the whole abdomen . . . . . *Macrothele* AUSS.

B. Only two tarsal claws . . . . . *Ischnocolus* AUSS.

Of these genera *Cyrtocarenum* and *Cyrtachenius* belong to *Cyrtachenius* THOR., *Cteniza* and *Nemesia* to *Nemesia* THOR., *Brachythele* and *Ischnocolus* to *Trechona* THOR., and *Macrothele* to *Diplura* THOR., On Eur. Spid., p. 164.

A separate family, *Chalinuroidæ*, which ought, it seems, to be located in the neighbourhood of the *Theraphosoidæ*, is formed undoubtedly by the singular genus *Chalinura* DALM. <sup>1)</sup>, remarkable for its small size, its long legs and its four mamillæ, of which the exterior ones are longer than the abdomen, two-jointed, with the second joint much the longer and thread-like. Only one species, *Ch. longipes* DALM., is known: a single specimen was found in a piece of copal, from what locality imported is not known, but probably from some one of the tropical lands of the Old World.

The sub-order *Laterigradæ*, which I had united in a single family, *Thomisoidæ*, to which however must probably be added the fossil family *Archæoidæ* C. KOCH <sup>2)</sup>, has by CAMBRIDGE <sup>3)</sup> been resolved

1) "*Aranea* (*Chalinura*) *longipes*. *Ch. pallida*, abdomine ovato, caudæ setis lateralibus abdomine longioribus, filiformibus, pubescentibus; pedibus elongatis.

*Hab.* — Specimen unicum Copalo inclusum, pedibus mutilatis.

Parva, longitudo corporis (absque setis) lin. 2; — tota pallida, nisi forte color morte mutatus.

Cephalothorax rotundatus, inæqualis, superficie tamen lævi, impressione dorsali; muticus, pallens, pube depressa obsitus; tuberculo antico valde elevato, oculos gerente. — Oculorum numerus et dispositio mihi non satis certo constant, ob ipsius Copali asperitatem; 4 enim discoidales valde distincti, quorum antiqui maximi approximati; laterales vero 4 minuti, postice positi; talis vero oculorum dispositio in Araneis omnino inconsueta, quare in dubium vocari potest. — Palpi pediformes, mediocres, articulo apicali incrassato, ovato, acuminato. Abdomen ovatum, convexum, dorso seriebus duabus e punctis 3 l. 4 impressis. Papillæ anales 4; quarum interiores breviores, conicæ; exteriores vero productæ, toto abdomine multo longiores, biarticulatæ; articulus primus cylindricus, papillis interioribus paullo longior; secundus longissimus, filiformis, attenuatus, intus manifeste pubescens. Pedes valde elongati, sed plures in nostro specimine jam in ipso Copalo imperfecti; adsunt tamen femora omnium, primi paris excepta. Femora secundi et 4:ti paris toto corpore sunt manifeste longiora; tertii vero illo breviora; pedes omnes graciles, mutici, subnudi, tarsis (4:ti saltem paris) attenuatis, muticis.

Vix dubitamus hanc Araneam proprium formare genus, quod *Chalinura* nobis dicitur, a *chalivos* frenum, *ovpa* cauda; suadent præsertim setæ caudales elongatæ, pedum eximia longitudo, — et forsân oculorum dispositio. — Specimen mancum descriptionem non admittere justam dolemus". DALMAN, Om insekter inneslutne i Copal etc., in Vet.-Akad. Handl. f. 1825, pp. 397, 398.

2) Vid. THOR., On Eur. Spid., p. 232.

3) Zoological Record for 1870, pp. 219, 220.

into three, as he considers *Philodromus* and *Stephanopis* as types of separate families. It now appears to me also reasonable to divide this sub-order into four families; but I prefer to take *Heteropoda*, instead of *Philodromus*, as the type of a new family, and I accordingly propose to divide the *Laterigradæ* into *Thomisoidæ*, *Heteropodoidæ*, *Stephanopoidæ* and *Archæoidæ*, and the *Thomisoidæ* further into *Thomisinæ*, *Philodrominæ* and (?) *Anetinæ*. The genera *Philodromus*, *Artanes* and *Thanatus* seem to me to be in fact more nearly allied to the typical *Thomisinæ* than to *Heteropoda*, *Micrommata*, *Sparassus*, *Selenops*, *Delena*, *Voconia*, *Hemiclæa* etc., which I combine under the denomination of *Heteropodoidæ*. The distinguishing characteristics of this group may be easily gathered from what I, On Eur. Spid., pp. 173 et seq., have advanced of some of the genera belonging to it. As regards *Stephanopis*, vid. CAMBRIDGE, Descr. and sketches of some new species of Araneidæ, with characters of a new genus, in Ann. and Mag. of Nat. Hist., 4 Ser., III, p. 60 (9); THORELL, Araneæ nonnullæ Novæ Hollandiæ, p. 378.

Of the sub-order *Citigradæ* no remarkable forms have, as far as I am aware, been of late years discovered, neither have any alterations of any importance in the classification of this sub-order been proposed. (See however above, p. 598).

In the sub-order of the *Saltigradæ* a separate family, *Aphantochiloidæ*, ought perhaps to be formed for the genus *Aphantochilus* CAMBR. <sup>1)</sup> (referred by CAMBRIDGE to the *Myrmecides*), which differs from all hitherto known spiders by the *absence of the labium*. — CAMBRIDGE <sup>2)</sup> thinks, that the family *Otiiothopoidæ* THOR. ought to be suppressed and *Otiiothops* referred to the same family as *Palpimanus*, because the abnormal number of joints in the legs — on which I laid especial stress — cannot be a matter of sufficient weight to form the foundation, on which to erect a family, but at the most a genus. There is however a considerable difference between one of the *tarsal* joints being *divided into two*, as may be the case within the family *Hersilioidæ*, — which CAMBRIDGE adduces as an example of a family, in which genera with different numbers of joints in the legs occur, — and *another* of the joints of the legs being *entirely absent*, as is the case in *Otiiothops*. The latter circumstance appears to me of far greater systematic importance than a deviation from the usual number of

1) On some new gen. and spec. of Aran., p. 744.

2) Bibliogr. Notice etc., p. 417.



the tarsal joints; and, as also the position of the eyes in *Otiotrops* is quite different from that which obtains in *Palpimanus*, I am still of opinion that the family *Otiotropoidæ* ought to maintain its place.

Regarding the systematic position of the genus *Eresus*, opinions are, as is generally known, much divided: I have, in conformity with the older and more usual opinion, classed it under the *Saltigradæ*, whereas SIMON refers it to the *Epeiroidæ*, and CAMBRIDGE to his *Dictynides*. Now though it should be admitted that the affinity between this genus and the *Attoidæ* is not particularly close, yet it is in no small degree indicated through the medium of *Palpimanus*, as I have endeavoured to show (On Eur. Spid., p. 202); and I cannot see that we assign to *Eresus* a more natural place, either by placing this genus among the *Orbitelariæ* or next to *Dictyna*. That *Palpimanus* and *Eresus* are closely allied and cannot in a natural system be widely separated from each other, appears to me undeniable; whereas it is perhaps little else than a matter of taste, whether we consider these genera as the types of two separate families, or only of two sub-families within the same family.

TACZANOWSKI <sup>1)</sup> has lately described an *Attoid*-genus, *Jelskia*, in which the eyes stand in four rows, the four anterior eyes forming a square. This genus is therefore in a still higher degree than *Lyssomanes* HENTZ, typical of the sub-family which I (On Eur. Spid., p. 204), in virtue of this position of the eyes, proposed to form, and which may be called *Jelskiina*. — Several new genera must probably soon be formed in the extensive family of the *Attoidæ* (conf. sup., p. 204), one, for example, for the singular *Salticus coccinelloides* CAMBR. <sup>2)</sup>. The new (European) genus *Hasarius* SIM. has been already (p. 388) mentioned.

1) Aran. de la Guyane Française, in Horæ Soc. Ent. Ross., VIII, p. 128.

2) Descr. and sketches of some new spec. of Aran., with charact. of a new gen., in Ann. and Mag. of Nat. Hist., 4 Ser., III, p. 66 (15), Pl. V, figg. 53—56.

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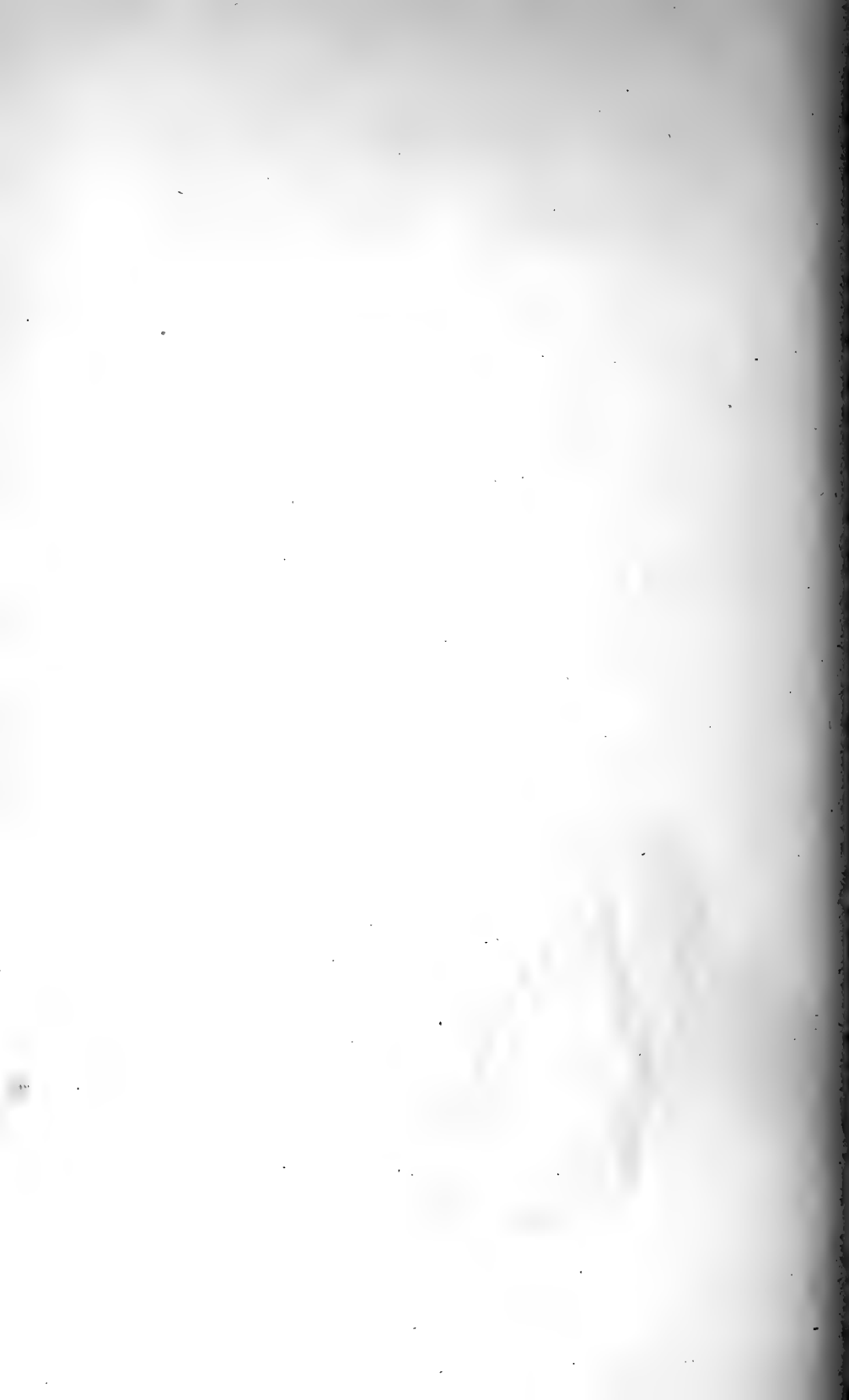
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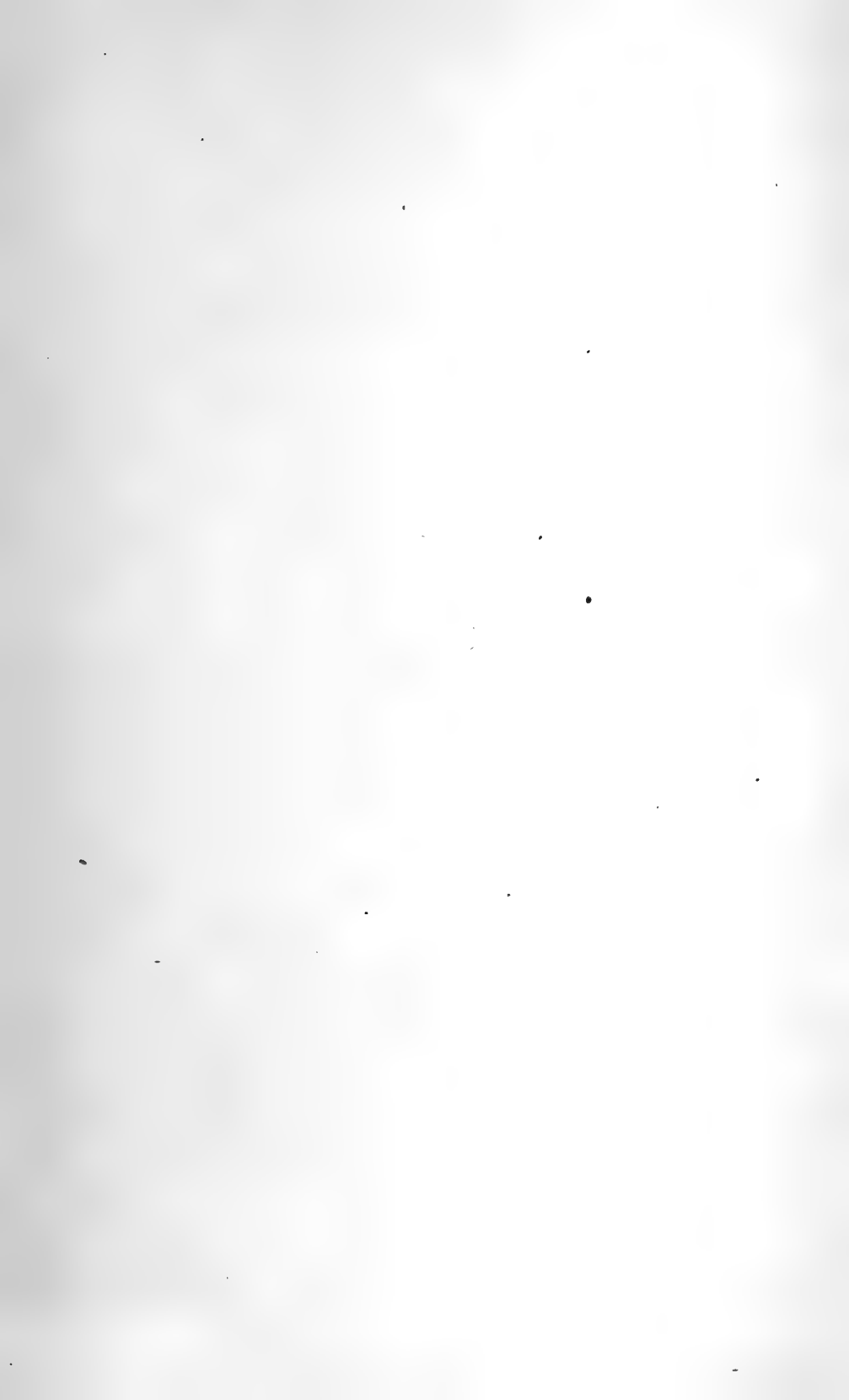
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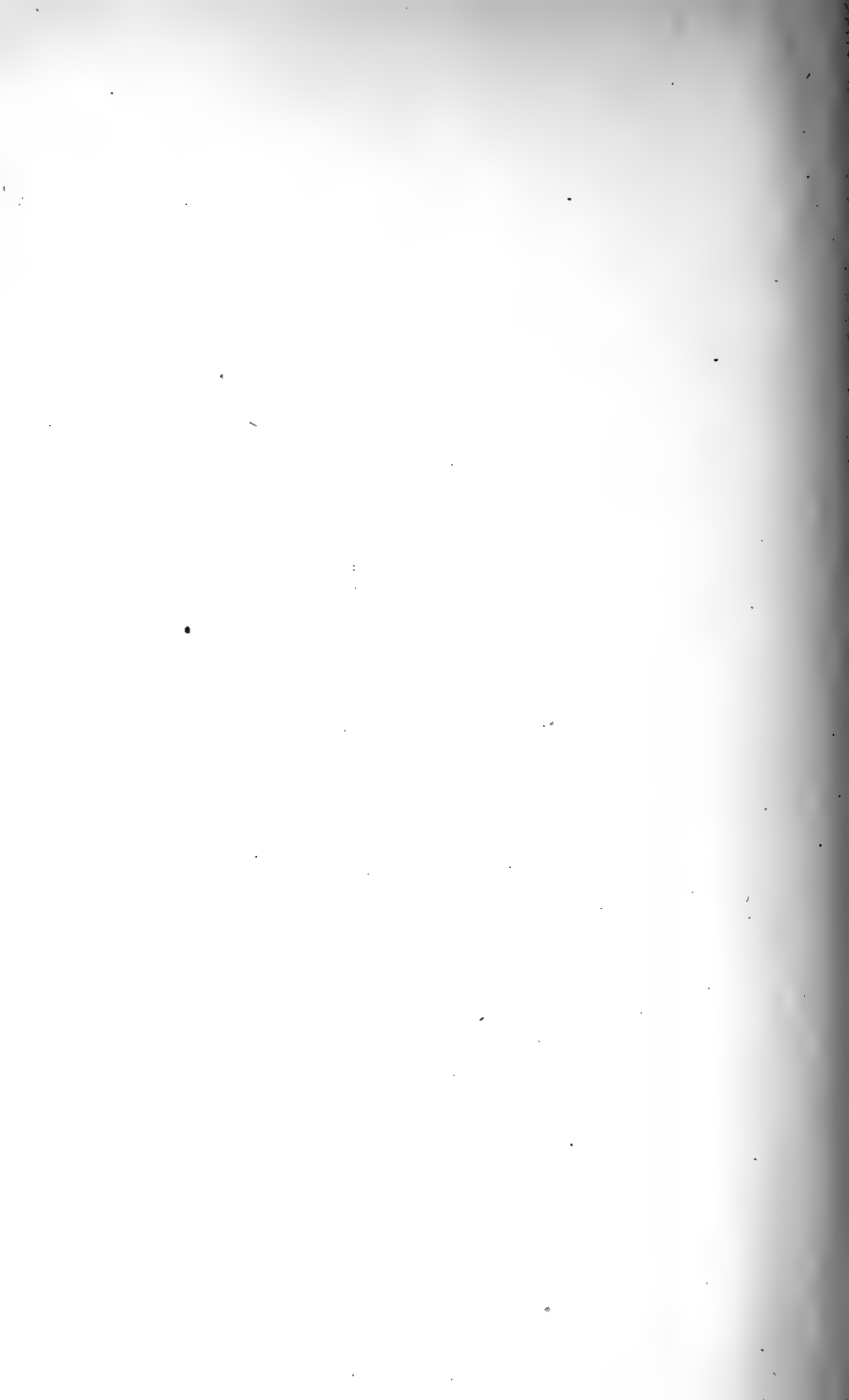


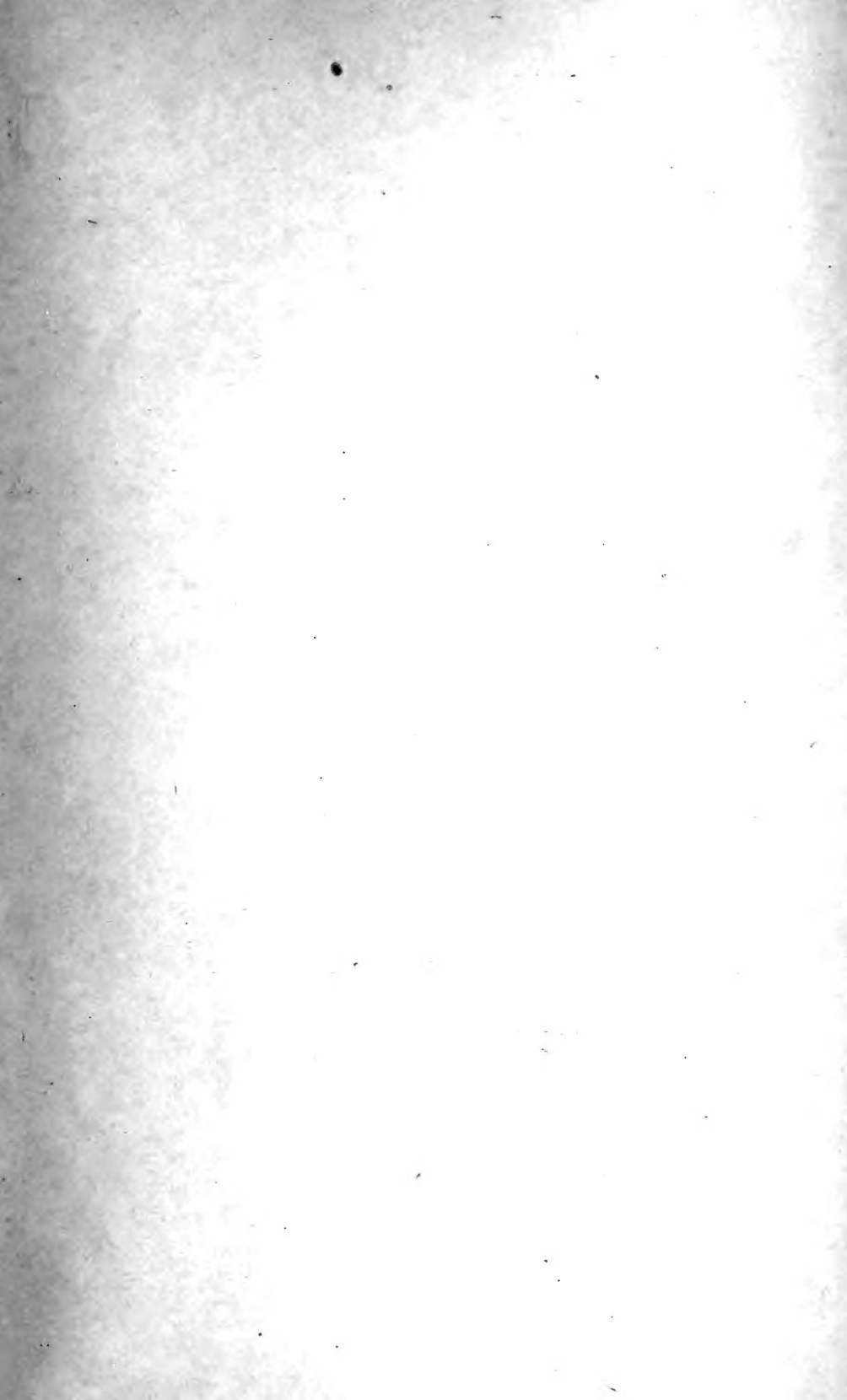


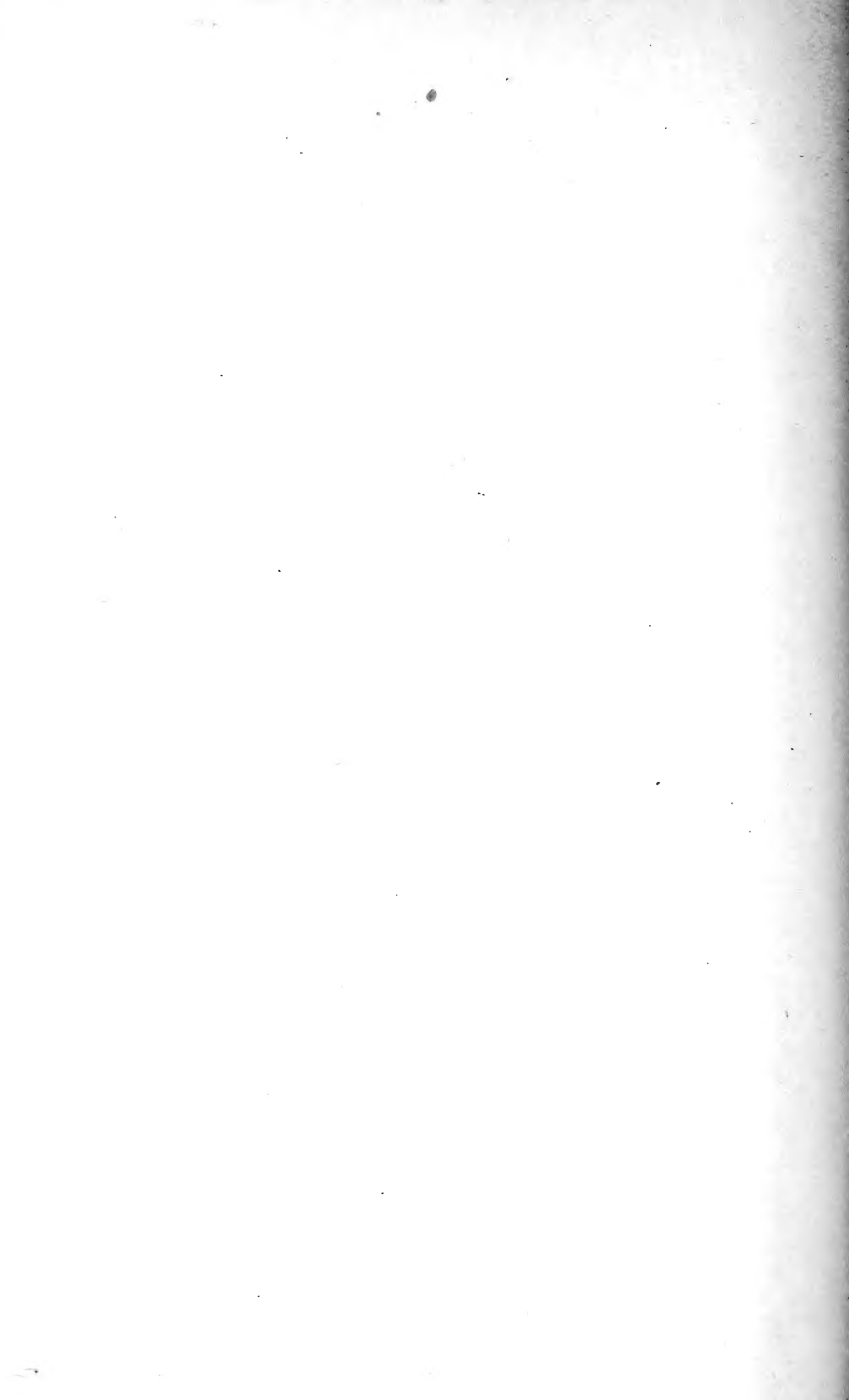














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